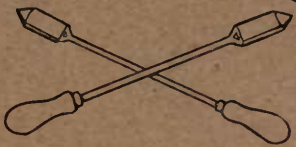

THE LIBRARY OF THE UNIVERSITY OF CALIFORNIA LOS ANGELES

SOLDERING KINKS



ILLUSTRATED

COMPLETE INSTRUCTIONS AND PRACTICAL SOLDERING SUGGESTIONS FROM USERS OF

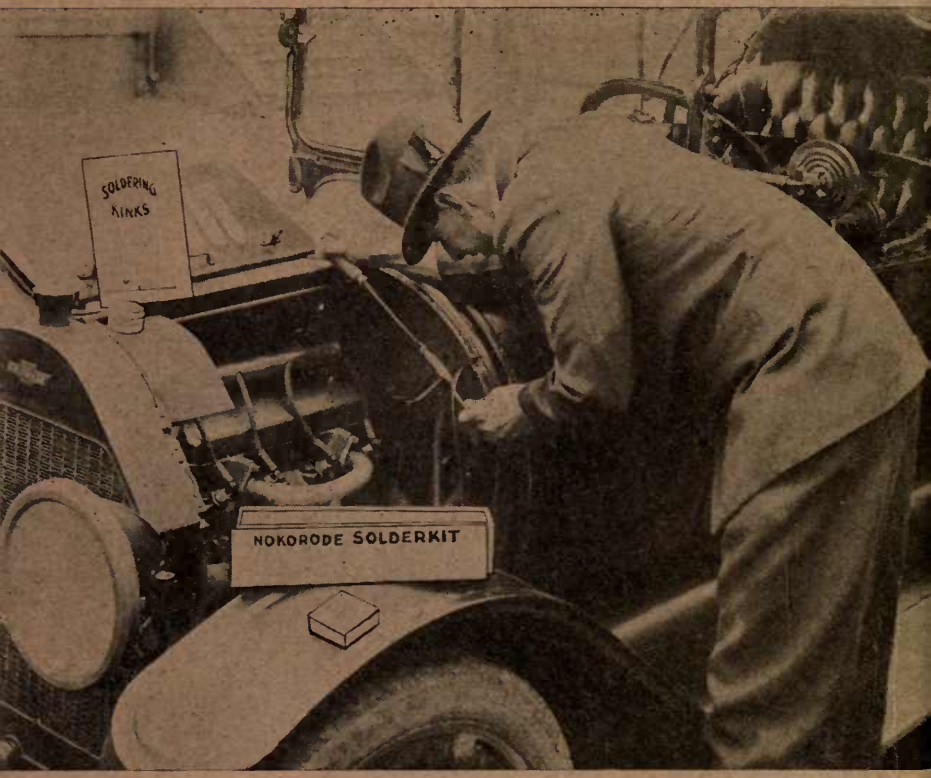
NOKORODE

"THE BEST SOLDERING PASTE IN THE WORLD"

25¢

Published by

THE M.W. DUNTON CO.
PROVIDENCE R.I., U.S.A.



If you own or drive an automobile you will surely want to know how a good job of soldering should be done.

This book will tell you many new ways to keep your car in service or to repair other cars.

SOLDERING KINKS

PUBLISHED BY

THE M. W. DUNTON CO.

150-152 NIAGARA STREET

PROVIDENCE, RHODE ISLAND

THIRD EDITION

INDEX

One Dollar in Cash

WILL BE PAID YOU

FOR EVERY NEW AND ORIGINAL IDEA ON SOLDERING THAT IS PRACTICAL.

If you can do anything with a Soldering Iron, no matter what, write us, giving as good a description as possible; if the suggestion is one that we can publish we will send you $1.00 in cash. *We want to help the boys at the bench.* The suggestion need not of necessity require the use of NOKORODE, but must be something that will help the other fellow.

DEDICATED TO "THE BOYS WHO SOLDER," PUBLISHED WITH THE VIEW TO HELP THE "OTHER FELLOW."

This book is written with the desire to help all who may be in any way interested in soldering, and is the outcome of the shop notes "Soldering Kinks" compiled with the assistance of valuable suggestions furnished by men of experience all over the country.

It explains all processes in the simplest way so that a beginner can understand every step taken, and at the same time suggest methods to improve and increase the factory output of those who make their living by soldering, or who find the knowledge useful or economical about the house, car, motor boat, etc.

"Soldering Kinks" published in the form of posters so that they may be tacked over the work bench for the benefit of the "Boys who Solder," many thousands of which have been issued semi-annually, have endeavored to tell new and improved methods of using solder, never before published, ideas originating in the minds and shop methods of men of experience in all kinds of work, to which contributors we are most gratefully indebted.

"Soldering Kinks" in poster form containing from 20 to 25 of the latest suggestions for soldering will be sent to those interested on receipt of 2 cents in stamps to pay for cost of postage, and labor of mailing.

This book of 70 pages containing 137 suggestions will be mailed on receipt of 25 cents in stamps.

Do not confuse the poster with the book.

THE M. W. DUNTON CO.

The Art of Soldering

Soldering is an art, but the art of soldering is a very simple one.

There are but four essential principles, and when these are followed, anyone can, after a little practice, do as good work as the most experienced workman.

The four principles of soldering are as follows:

(1) The soldering iron must be kept clean and well tinned.

(2) A good soldering flux must be used.

(3) The metals to be soldered must be thoroughly cleaned, before the joint is made.

(4) The joint must be heated above the melting point of the solder.

Soldering requires heat.

You may use a gas stove, coal stove, or a gasoline torch. Any of these will work satisfactorily.

Soldering irons cannot be heated properly in the yellow or illuminating flame of the gas because it smokes the soldering iron, and also because it is not hot enough.

It needs a blue flame, the same as given off by a gas stove, but a good clean coal fire will do.

To heat the soldering iron, slip the pointed end down through the hole in the center of the burner of an ordinary gas stove so that the blue flame comes in contact with the large end of the iron.

This method of heating does not burn the solder from the iron so quickly and the iron keeps hot longer.

To heat the iron in the ordinary cook stove, be sure to have a clean coal fire. Put the iron through the broiling door in such a way that the tin on the iron is protected from the flame by the lining of the stove. This leaves only the large end of the iron exposed to the fire. This method will save burning off the tinning. If you have no gas stove or convenient method of heating your iron, a gasoline torch would be ideal.

To tell when the soldering iron is hot enough, try it by putting the solder to the point. If the solder melts as soon as it touches the iron it is hot enough and ready to use. If the iron is overheated the tin-

ning will be burned off and it must be retinned, or if the end of the iron becomes black and the black will not wipe off the iron needs retinning.

To retin a soldering iron if the tinning gets burned off, rub it on a clean brick, sand paper, emery cloth, or file to brighten the surfaces, and if it is badly pitted file it smooth.

Then heat it under any of the methods suggested and put on a suitable soldering flux, rubbing on the solder, at the same time going over all four sides of the iron while it is still hot, and wipe them on an old cloth.

This makes the soldering point of the iron look bright and shiny, the color of new tin.

Your soldering iron must be kept in this condition if you wish to do good work, and the cleaner and better the iron is kept, the better the class of work you will be able to do.

The metals to be soldered together must be thoroughly cleaned by scraping with a piece of emery cloth or a file.

With the iron properly heated and the metals ready to be joined, the next step and the most essential one in the entire operation is the use of the right kind of a soldering flux.

For ordinary work this flux should be in the form of a paste, which can be applied with a stick or a brush, or the end of the solder, and apply it to the parts to be soldered.

In selecting your paste be sure you get one that is non-corrosive, that will solder all metals, that is thoroughly made, so that each particle that you pick up on the head of a pin has all the elements of the flux; one that is being made carefully all the time.

There are fluxes on the market that are made so carelessly that they are one preparation one day and something different the next.

Be sure to buy a flux that you can rely upon.

If it can be done the best results will be obtained by holding the hot soldering iron underneath the parts to be soldered, and remember both sides of the joint to be soldered must be heated alike to make a good joint.

The solder is then held on the top, and as the heat rises it melts the flux, which should flow to every part of the joint, and later the solder melts and flows as far as the flux, making a perfect joint.

For this reason a flux that will flow a longer distance is the best to use on most classes of work.

Where it is impossible to apply the heat from below, good work can be obtained by keeping the iron on top, provided you are careful to get the parts to be soldered hotter than the melting point of the solder.

When the solder has run freely take your soldering iron away and let the parts soldered get cold.

If the joint is given a slight tap while the solder is still hot the surplus will be shaken off and a clean-looking joint will be the result, but in doing this be careful not to separate the joint.

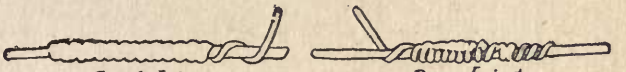
If the solder looks bunchy, while it is still warm take a cloth with a little of the flux on it and rub it over quickly. This will make a clean, smooth joint.

Practice makes perfect.

You can learn to solder as well as anyone.

If the first job is not perfect, do not get discouraged. You are bound to get good results eventually.

I show below the difference between a good joint and a poor one.



Good Joint *Poor Joint*

There are three troubles with the poor joint shown above.

(1) Wires should be cleaned by scraping before the joint is made.

(2) A good soldering flux should be put on to the top of the joint before the heat is applied.

(3) The joint is not hot enough; the soldering iron should have been held underneath to let the heat rise.

IMPORTANT

Many "Bench Workers" take the hot iron from the fire and immediately plunge it into a solution of Sal Ammoniac and water, before doing each job of soldering, to "keep it bright and well tinned."

This is very bad practice, as Sal Ammoniac is made from Sulphuric Acid and Ammonia, either of which would cause corrosion in short order.

The best bath for a soldering iron is a solution of one part of Nokorode Salts cut with forty-eight parts water (distilled if possible).

This makes the cheapest bath known and when this solution is used no corrosion will appear.

HOW TO SOLDER A HOLE IN A TIN PAN.

While the soldering iron is heating, clean the hole in the pan, with emery cloth enclosed, and rub a little NOKORODE around the hole on the inside of the pan; hold the point of the soldering iron against the hole on the outside of the pan, place solder on inside where the Nokorode is. When the pan is hot enough the solder will melt and cover the hole. If the hole is too large to solder, put on a patch as follows:

With a pair of scissors, cut a piece of tin out of an old can which is not rusty, have the piece quite a little larger than the hole. While the soldering iron is heating thoroughly clean the patch on both sides, and around hole in pan, with emery cloth, then rub both with Nokorode. Have pan right side up so patch will be inside. Now place the tin patch over hole on inside of pan with hot iron outside of pan underneath hole and hold the stick solder inside on edge of patch. As it begins to melt move the solder completely around patch, or use more Nokorode and solder and cover entire patch.

If the article to be mended is either a galvanized iron, or plain iron, brass or copper kettle the same instructions apply, except that the hole must be first tinned, that is, a light coating of Nokorode and hot solder must be put around the hole and thoroughly wiped over with a cloth to which Nokorode has been applied.

If a patch is necessary, be sure to tin patch also, then proceed as directed for a tin pan.

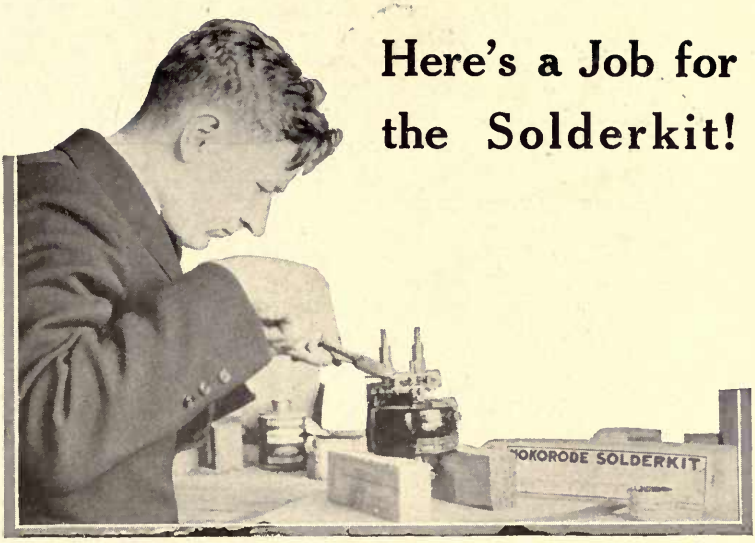
HOW TO SOLDER GRANITE AND ENAMELED WARE.

Scrape off the rough edges of enamel around the hole, ¼ inch or more, according to size of leak, brighten the metal underneath with emery cloth, and apply NOKORODE. Turn pan right side up, and apply a thoroughly heated soldering iron, underneath the hole, place stick of solder on inside of pan, and when metal is hot enough solder will melt and cover the hole.

This place may be coated with bath tub enamel and allowed to thoroughly harden. This will prevent rusting and give a neat finish.

All soldering and patches must be on inside of pan where there is moisture to keep it from melting, otherwise heat from fire will melt the solder and it will drop off.

Here's a Job for the Solderkit!



This is an actual snapshot of an Experimental Engineer "locking" one of the bearing sleeves of the transmission for a model submarine. This job was performed quickly, easily and thoroughly with the aid of Nokorode. A well-tinned copper, made very hot, "sweated" the solder into the space between the sleeve and plate in less than a minute without taking the transmission apart.

This job was one of the most trying and difficult ones the Laboratory Staff of Everyday Engineering Magazine could conceive of. To take the transmission apart after having lined up the bearings would mean loss of time; the bearing sleeve was loose in the plate; the Nokorode did the trick with one heat of the copper and a generous application of Nokorode Soldering Paste.

—Everyday Engineering Magazine Experiment Station

Make Your Magnet Spools with Nokorode

For experimental electro-magnets, motor field bobbins, etc. cut lengths of brass tubing or roll up tubes of tin to desired length; scribe and cut sheet brass or tin washers to fit tubes; apply Nokorode Soldering Paste inside and out; sweat solder with good, hot copper, until solder runs through the joint; wipe clean before quite cold, and your job is done.

It will not corrode, warp or come loose.

—Everyday Engineering Magazine Experiment Station

TO SOLDER THE HINGE ON A COFFEE OR TEA POT
(Except when made of Silver.)

While the soldering iron is heating, thoroughly clean both parts to be soldered.

Hold hot iron to parts about three minutes, taking care not to melt other soldered joints near it. Very quickly dip the stick of solder into can of "Nokorode" and apply to joint while holding soldering iron to parts. Remove iron quickly.

> Remember that Aluminum cannot be soldered and articles of Silver and Gold should not be attempted.

Soldering Kink No. 29

To Solder Enameled Tie Pins.

The pin of an enameled tie pin or badge coming loose it may be soldered as follows: Clean pin on end next to the plate, also clean back of enameled plate, apply Nokorode and with a moderately heated soldering iron apply a thin coat of solder to each, then place it in right position and touch iron to back of pin only, leaving it there long enough to barely sweat the joint together. Care should be taken not to leave iron on pin very long at a time as too much heat might crack the enamel.

GLENN METCALF, Blandinsville, Ill.

Soldering Kink No. 38

Removing a Broken Machine Screw.

To remove a small machine screw when the head is broken off, take a small soldering copper and tin the broken part of the screw, being careful not to get solder on the other parts. Then take a machine screw that is a trifle larger than the broken one, file the end bright and tin it. Sweat the two screws together with solder and when it cools a screwdriver will turn out the broken screw.

GERTRUDE M. BENDER, Utica, N. Y., "Popular Mechanics."

Soldering Kink No. 7

An Easy Way to Apply Solder Smoothly.

A good way to tin the surface of a piece of metal is to first clean it, apply a little Nokorode and attach to it in several places, small lots of solder, then use a stick or brush that has been dipped into the flux and spread the solder by brushing it while hot. G. A. BUZZELL.

Soldering Kink No. 6

To Tin Small Work Without Solder.

The following will be found quite handy at times in soldering small pieces. Thoroughly clean each piece and apply the flux to each separately, then place between them a small piece of pure tin foil. Apply the heat and a perfect joint can be made. G. A. TEFFT.

Soldering Kink No. 5

Soldering Metal Fixtures to Lead Pipe.

A cone-shaped piece of strong asbestos sheathing fastened on a piece of copper, iron or brass tubing, as shown in Fig. 1, allows enough solder to to be built up around the point where the two pieces of tubing are to be joined, to assume the shape shown in Fig. 2. This mass of solder can be filed or rasped into the form shown in Fig. 3.


Fig. 1


Fig. 2


Fig. 3

Besides being a reinforcement, this joint is more uniform in shape and thickness than the joint ordinarily made with the soldering iron.

Instead of the soldering iron a blowtorch can be used, the joint first being tinned and then pieces of melted solder dropped into the asbestos cone and heated to the requisite degree for forming a joint.

POPULAR MECHANICS.

Soldering Kink No. 54

For Soldering Small Pieces at Both Ends.

I am a user and admirer of your soldering paste, Nokorode. The other day I chanced to pick up a copy of your Soldering Kinks, and having a little kink in mind that has saved me time I thought I would give it to the boys.

In soldering small pieces at both ends one often has trouble with the first end unsoldering.

Take a strip of cloth (preferably wool), dampen it and wrap it around the end first soldered and one will have little trouble with the heat melting the solder off. L. C. WESLEDER.

Soldering Kink No. 52.

To Repair Spout on Oil Can or Gun.

Don't throw your oil can away when the spout is loose. Wash it thoroughly with gasoline. Then put spout in place, clean thoroughly, apply Nokorode, also a heavy coat of solder all around the spout, seeing that it "sticks" all around. This will make your old can or gun as good as a new one. GLENN METCALF.

Soldering Kink No. 53.

Stopping a Weld.

A weld can be stopped at any point by placing a piece of paper in between the pieces just before they are brought to a welding heat. The metal will not run together where the paper is placed. A. S. THOMAS, "Popular Mechanics."

Soldering Kink No. 59

Solder Your Buttons Instead of Sewing Them.

Of course on the first thought the idea of soldering on buttons seems rather impracticable, but the boys in the shop here find it a very useful idea. Probably the largest of the users of "Nokorode" wear overalls.

The buttons on most overalls are not sewed on, but made in two pieces riveted together not any too firm. A sudden strain on the shoulder straps will pop the buttons off and then a fellow soon loses his pants.

Now thread, needles and buttons are not found in a great many shops, but "Nokorode" and solder OUGHT to be found in ANY place of business, and all you have to do is place the two parts of the button together, put a little "Nokorode" in the socket of the button and drop in a little hot solder with an iron. Presto! the job is done and the button is more secure than ever before.

H. C. WING.

Soldering Kink No. 40

Convenient Receptical for Soldering Flux.

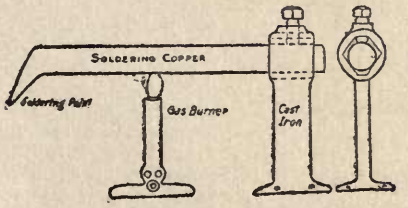
I am a firm user of Nokorode and have a little suggestion to make, one which I am using and like it very well. I have a grease cup of middle size and instead of carrying a box of Nokorode around in my kit, I fill this grease cup which will stand hard knocks in the kit which the Nokorode can will not. Now when I have a joint to solder I take my grease cup filled with Nokorode and give the top of cup a little turn which will cause very little Nokorode to come out on joint; if I have too much out I turn it back a little and in that way I save quite a little paste and I can carry it around in my pocket and it is also always ready.

The grease cup can be used indefinitely while paste in a collapsible tube is much more expensive than when sold in ordinary containers; collapsible tubes can be used but once, by buying NOKORODE in a 1 lb. package and using the grease cups. my expense for flux is very small.

CARL SONTAG, Scranton, Pa.

Soldering Kink No. 47

This Soldering Iron more than Doubles Factory Output.



I designed this device for soldering battery connectors. It worked very satisfactorily on account of the flame being so far away from the soldering point that there is not corrosion and no interruption in the work.

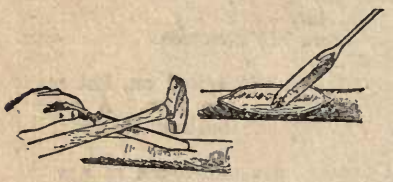
One thousand connections were soldered per hour. The heat can easily be regulated by moving gas burner back and forth

HUGO CARLBORG, Providence, R. I.

Soldering Kink No. 1

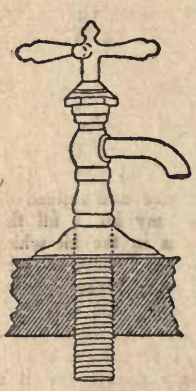
Repairing the Bottom Wall of a Lead Pipe.

In case of a leak in the bottom wall of a horizontal lead pipe it is often better to repair than to renew the pipe. Cut a slit in the upper side with a thin knife and work the pipe open so that you can scrape the pipe bright and do your soldering on the inside. Use Nokorode with the solder when soldering lead with a soldering copper. When the leak is sealed over with solder work back the lead on the upper wall, closing up the hole you have made with the knife and solder it.



Repairing a leak from the inside.

Soldering Kink No. 57



To Renew the Threads on a Faucet

Some time ago, at our home, my attention was attracted by a brass faucet which leaked where it was screwed into the tee. The leak was found to be caused by some of the threads being stripped.

I heated the threaded part and dipped into liquid sal-ammoniac and when cool generously applied "Nokorode" and with a well-tinned and extra hot soldering iron applied a coat of solder all over the threaded portion.

This was held before flame of torch until solder began to run, then given a shake and just enough solder was left on to make it fit snugly.

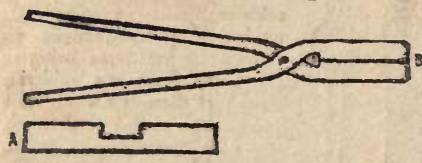
If unable to get a tight joint, the faucet may be turned into the tee while solder is still warm and the threads in the tee will cut a new thread on the faucet so that it will be water tight.

LEONARD MAZUR.

(This same method may be applied to the threads on a bolt that has become too small to hold.)

Soldering Kink No. 65

Brazing Band Saws.



Many people are put to great expense and their work unreasonably delayed because they do not know how to braze their band saws.

"Nokorode" is the best thing in the world with which to braze a saw, and should be used as follows:

The lap end of saws are held in a brazing clamp and a little "Nokorode" Soldering Paste is then applied at the joint, and strips of solder are put in between. A hot iron underneath and one on top, clamping the two together, and the job is completed.

E. F. BAKER.

The Soldering Iron

is the handiest and most useful tool in the experimenter's workshop.

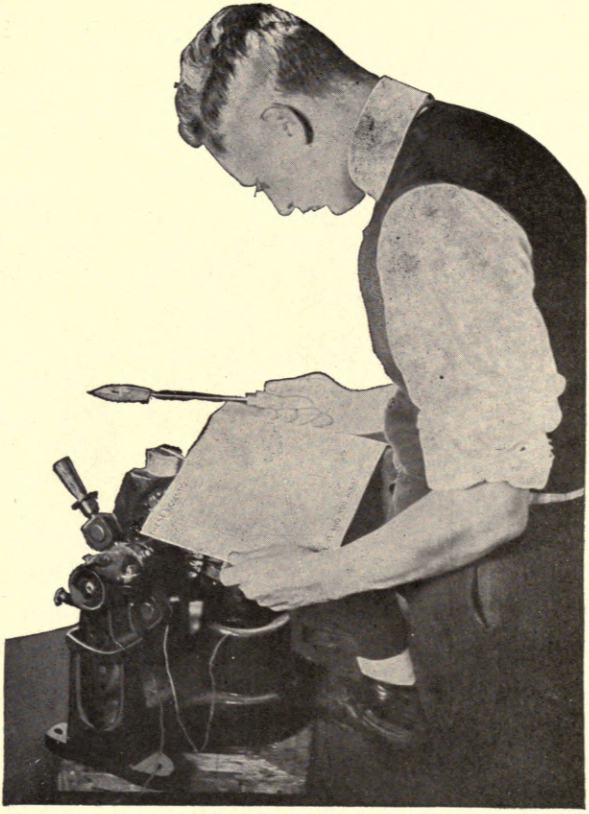
With it you can make many things without the need of expensive and elaborate tools; it will actually take the place of taps, dies and even that almost indispensible tool—the lathe.

You know how trying it is to make solder "flow;" to make it "sweat" so thoroughly into the joint that the union is almost as strong as if it were brazed. You know how difficult it is to remove acid flux from a delicate job you have done.

You know what corrosion will do inside the windings of an induction coil or transformer.

The use of Nokorode will avoid all these troubles and give a quicker, better and stronger joint.

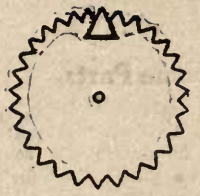
—Everyday Engineering Magazine Experiment Station



The commutator risers of the large generator shown in the illustration were actually soldered in three heats with a soldering copper weighing only **one-fourth** of a pound and Nokorode Soldering Paste.

—Everyday Engineering Magazine Experiment Station

Soldering Kink No. 56



Repairing a Broken Tooth in a Registering Machine.

It was my work in a certain shop to take care of a few registering machines in which two cast iron gears were employed, and usually when one of these machines came into the shop for repairs it was found that a tooth had let go in one of these gears.

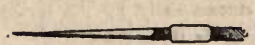
I put on so many new ones that I feared for the company's investment.

After I had about a dozen on the shelf for this trouble, an idea struck me; why not put a new tooth in to replace a broken one; so I immediately got busy with the milling machine and milled a dovetailed slot in gear just below the broken tooth, with this I took a piece of brass the same thickness as the gear and cut out a tooth with a dovetailed base, to fit the slot in gear.

Upon tinning the joint with solder and "Nokorode" and sweating the same I found that I had a gear which answered the purpose nicely, there not being a great deal of strain on the gear when in use. LAWRENCE GOODHUE.

Soldering Kink No. 70

A Mended File and a Finished Job.



Recently I had several hundred small brass castings to file out and during the operation I had the misfortune to break the file through cramping. Not having another around the shop and not being in a position to secure one at once, I hit upon the plan of soldering the broken one together.

I first tinned over the two broken stubs about a quarter of an inch back by the use of "Nokorode" and a soldering iron, being careful not to draw the temper too much. Next I rolled up a little piece of sheet brass and slipped it over the break. Then proceeded to apply the "Nokorode" and solder the whole together. I was surprised at the way the solder flowed, as the file was not cleaned in any way before the operation, and by careful use I managed to complete the job and am enclosing the sample for examination. I think this same idea might be applied to flat files as well as round. H. C. WING.

Soldering Kink No. 9

A Time Saver to Increase Speed in Bench Work.

To solder small parts quickly and save the time required to pick up iron or solder, make a stand from two pieces of board nailed at right angles, fasten one end to the bench and in the upright, at a convenient height, make a hole of sufficient size to hold the solder, then by holding the parts to be soldered in the left hand and the soldering iron in the right the upright will act as an assistant and always hold the solder just where it is most convenient.

Soldering Kink No. 20

Soft Solder for Tightening Machine Parts.

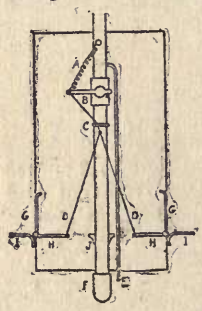
It is not generally considered workmanlike to use soft solder in connection with machine parts, but an exception may be made in tightening up the parts of loose fixtures. For example, if the driving gear on the spindle of a lathe is so light that it does not afford a good support for the key, the gear, key and spindle may be tinned and heated sufficiently to melt the solder which sweats the parts solidly together and holds the gear firmly in its place. Such a job will last almost as long as the various parts and will save all the lost energy and wear that accompany loose, rattling machinery.

POPULAR MECHANICS.

Soldering Kink No. 21

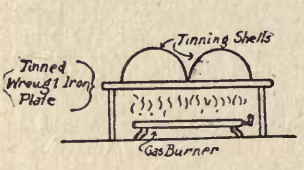
Bench Heater for Two Soldering Irons.

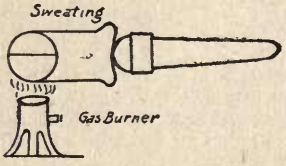
The solder pot described here is used suspended above the work bench leaving the work space free and unobstructed. It can be used from either side of the bench and is so arranged that when not in use, the gas is turned out automatically, only a pilot flame burning. The method of operation is as follows: By inserting the soldering iron by pushing in the door (G) the lever (H) outside of the pot pulls on chain (D) which opens valve (B). When the irons are not in the fire, the doors G are closed automatically by the spring A which shuts off the gas. C is a ring through which the chain passes. I is the rest for the soldering irons when being heated. J is the burner. E and F are the pipes leading to the pilot flame and burner respectively. The position of neither door interferes with the operation of the other, when either door is open the heater is working.



H. PICCARD.

Soldering Kink No. 22





Sweating Process:—Take a piece of wrought iron about 5-16″ x 4″ x 6″ or according to the size of the work. Finish one side of the plate even and bright. Now coat the bright side with Nokorode paste, then apply the solder; heat the plate evenly over the gas burner; then rub the solder over all. Be careful not to over-heat the solder.

Place plate about four inches over the bench. Four nails five inches long will do for legs driven into the bench one inch.

Regulate the gas burner so as only to keep the solder in molten condition.

The work to be sweated must be trimmed on the edges very nicely, then dip the same in some of the soldering solution which may be made of Nokorode salts cut with water to the strength required, and place it on the plate to be coated on the edge; move the pieces around before it is taken off. Put them evenly together in the tongs or holder and sweat over the gas burner.

OTTO CARLBORG.

Soldering Kink No. 16

Scheme for Preserving Tinning On Soldering Copper:—We have found by cutting a couple of pieces of ordinary iron pipe the length of the gas furnaces and about two inches in diameter, and placing them in the furnaces where the irons were ordinarily placed, we had an oven that would completely protect our irons. It seems that the pipes prevent the corrosive action of the gas and flame, from acting on the soldering irons and thus preserve the tinning.

We have had such remarkable results with this simple device, that I wish to pass it on to the rest of the boys who have, no doubt used many a strong word when they went to solder a jumper and found the tin all burned from their irons. L. L. DAVENPORT, "*Telephony.*"

Soldering Kink No. 17

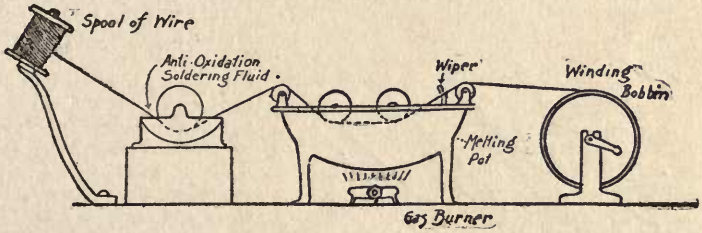
Better than Electric Soldering:—I have tried a number of different kinds of heating devices while soldering armature coils to commutator bars and also when putting band wires on, and have failed to find anything that answers the purpose so well as the one I am now using.

I took a heating unit of an old discarded tailor's iron; and after doing some repair work on the unit itself, I cut several thicknesses of heavy asbestos board into just the shape of the top of the unit. Putting plenty of shellac between these, I placed them on top of the unit to protect the hand from excessive heat. In making a handle I raised it about twice as far away from the iron as such handles usually are. This is proving to be the most useful tool I have ever found for sweating-in armature leads, and soldering on band wires. W. A. HINES.

Electrical Review and Western Electrician.

Soldering Kink No. 18

Process for Tinning Wire



Put a spool of bright copper, brass or iron wire on a pin or bar so it revolves; then pull the end of the wire under the grooved roller in the soldering flux, which may be made of one part Nokorode Salts cut with 48 parts distilled water. Next pull the wire under the grooved rolls in the melting pot, then through the wiper made of soft woolen cloth and fasten the end of the wire to the bobbin. Turn the crank and the process is in operation, Heat the tin in the melting pot, so it hardly chars a stick of soft wood and regulate the gas to maintain an even heat.

Keep enough fluid in the cup so it covers 1-3 of the diameter of the grooved roller.

Keep enough tin in melting pot so that 1-3 of the diameter of the rollers is in the metal. OTTO CARLBORG

Soldering Kink No. 8

M. W. Dunton Company, Providence, Rhode Island.

Dear Sirs:

We are sending you under separate cover, copy of the American Wire Rope News. You may be interested in reference made to your "Nokorode" soldering paste on page 5.

Our people have found this very useful in our own works and we were glad to give you a little free advertising, in as much as this publication has been mailed to 100,000 users of Wire Rope and Strand.

Very truly yours, AMERICAN STEEL & WIRE CO., Elec. & Wire Rope Dept.

C. W. BASSETT, Sales Agent.

For Use on Aeroplanes.

a b

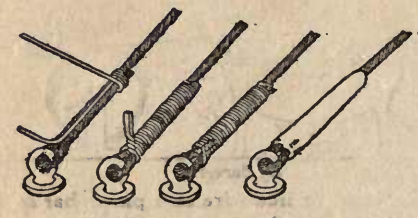
The well known wire rope open-socket of a small, light pattern is here shown fastened to a stay strand. To attach this socket the soldered end of the stay strand is passed through the socket, two or three wraps of fine, tough wire are made about the strand as illustrated at (a). The wires are then untwisted, cleaned with benzine and doped with Nokorode soldering paste. The strand is drawn back into the bowl of the socket until the ends of the wires are flush with the large end of the socket bowl. Molten spelter is then poured into the socket and adhering to the wire which cannot be pulled through the socket (b). By the use of open sockets, stays may be fitted complete of the proper length and readily attached or detached as occasion requires.

AMERICAN STEEL & WIRE CO.

Soldering Kink No. 10

Method of Making Strong and Neat Stay Strand Fastening.

The illustrations explain the method of making a very strong and neat stay strand fastening. The short end of the strand, after passing through the eye is temporarily tied to the main part with string or wire if necessary. Tough annealed iron wire or soft brass wire used for seizing is first laid into the groove between the two parts of strand. About three inches from the eye, the seizing wire is given a right angle bend and the wrapping begun (a); the ends of the seizing wire are twisted together (b) and laid against the seizing (c). The wires in the short projecting end of strand are next loosened or opened by pinching with pliers (c). This is done in order that the solder may adhere to the wires and form a knob that cannot pull out of the seizing. The entire seized fastening is then cleaned with benzine, coated with Nokorode soldering paste, and heavily soldered (d).



a b c d

If the surface of tinned or galvanized stay wire or strand has been scratched in securing it to eye-bolts, rust spots will soon appear, especially as the moisture settling on the stay runs down and collects on the fastening itself. It is therefore a wise precaution to paint all stay fastenings with black asphaltum paint or turpentine japan.

AMERICAN STEEL & WIRE CO., *Wire Rope News.*

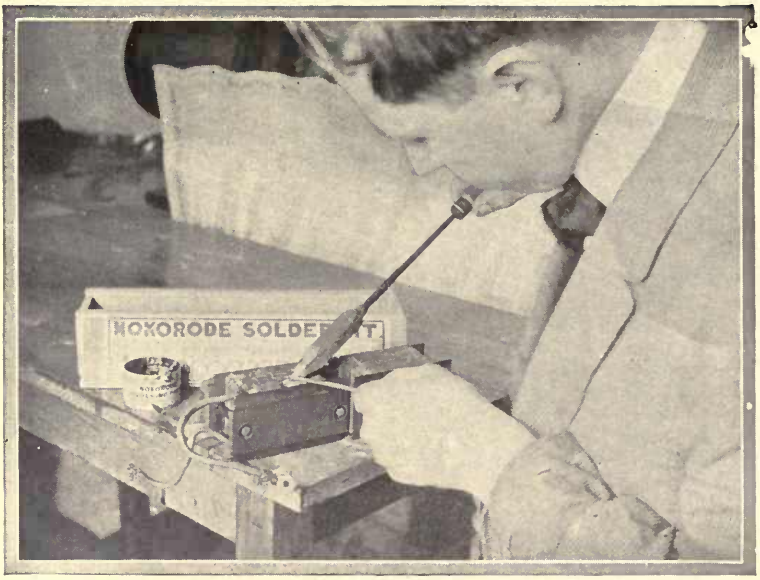
WANTED — A 70-VOLT TAP

The transformer was wound for 110 volts. Its owner moved to the "D. C. District" where he had to use a "rotary" giving only 70 volts. He had either to rewind the transformer, make a step-up converter for it, or tap its primary at the proper turn.

The last named expedient proved easy with the aid of Nokorode.

The insulation was bared at the outside turn of the second layer from the top. A piece of flexible lamp cord held against the bare copper, a touch of NOKORODE Paste, the application of the hot soldering copper, and the job was finished.

—Everyday Engineering Magazine Experiment Station



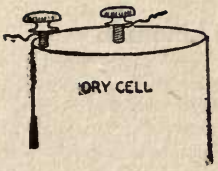
MAKING A CONDENSER

The task was a difficult one, but was accomplished with the aid of Nokorode Soldering Paste.

Solder was "flowed" on the edges of the condenser plates to connect the sheets of tinfoil which were placed between mica plates.

Nokorode has helped us through so many "impossible" tasks that it is looked upon as the experimenter's Aladdin's Lamp.

—Everyday Engineering Magazine Experiment Station



Soldering Kink No. 31

To Solder Negative Pole on Dry Cell.

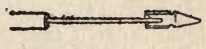
"Often the negative binding post on a dry cell gets loose and drops off. Don't throw it away but do as follows: Pull cardboard cover off, clean zinc shell of battery where terminal belongs, dip terminal in muriatic acid, place on edge of battery apply a little Nokorode and solder."

GLENN METCALF, Blandinsville, Ill.

Soldering Kink No. 11

Grooved Copper, Good for Soldering Heavy Wires.

I had some trouble in soldering small insulated wires, usually of No. 18 B. & S. Gauge to line wires. To make the joint I was in the habit of removing the insulation from the small wire over a length of six or eight inches and winding it tightly around the larger wire after cleansing both wires thoroughly with sandpaper. Usually a good hot copper, applied to this with proper flux would make the solder stick, but if solder was applied before the joint was hot, much ran to the lower side of the copper and dripped off, or if the work was in some inconvenient place the copper often was too much cooled before we could get in position. Under these conditions solder often sticks only on one side, or in scattered spots.

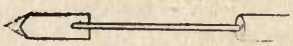


I cured my trouble by filing a small groove across my copper just back of the bevel. This groove is about 3-16 inch deep and of like width. A good groove can be easily cut in a copper by clamping a flat piece of iron (buggy tire is good) against the face of the copper in a vise, and drilling between the copper and the plate of iron. I find a 3-16 inch or 9-23 inch drill about the right size for a No. 12 wire. The drill should be made to cut to at least two-thirds of its diameter into the copper.

F. H. S. "Telephony."

Soldering Kink No. 12

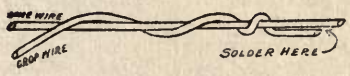
For Soldering Commutators:—In soldering commutators, I find that instead of using the iron with the usual 40 to 60 degree taper, a blunt pointed iron about 90 degrees, keeps the heat right at the point where most needed, allowing the solder to run down and around each wire in the slot.



H. W. BANSMITH.

Soldering Kink No. 27

Soldering Telephone Drop Wires to Line Wires.

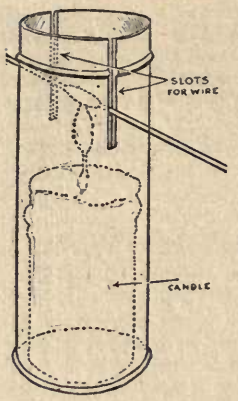


The trough where soldered, only, is brightened with fine sand paper. Wire solder, Nokorode Paste and any hot iron, tinned or untinned or blow torch does the rest. Used several years. Nothing like it. Always in long wrap as shown. Easily disconnected.

H. G. NEWELL

Soldering Kink No. 4

A Handy Soldering Torch for Linemen



This diagram shows the construction of an ordinary round talcum powder box which does very nicely as it will just admit a large size candle and by cutting two slots down the side of the can, one opposite the other, just wide enough to admit the line wire to enter so as to keep the joint the proper distance from the blaze as the candle burns away, it will do the work not rapidly but very effectually when the wind is too strong to permit the use of a blow torch.

I have used this simple device for over a year and find it very good. The can has two principles, one is to protect the blaze from the wind and the other is to confine the heat of the blaze into as small a place as possible.

Columbus, Ohio. H. E. AMANN.

Soldering Kink No. 26

To Repair Open Circuit on Solderless Connectors.

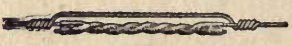


Fig. 1.

Fig. 2

Construction specifications call for a certain number of turns for each kind of copper sleeve and to linemen's failure to comply with these specifications is due some cases of loose connection in the line wire. Upon repairing a new copper wire with an old one in which the joints had been bridged and soldered, a very noisy circuit was found. When investigated, it was discovered that all joints had been bridged but in soldering the bridging wires, many loose connections had been left. The bridges were made as shown in Fig. 1. That is, the bridging wire was wound around the line wire in a closed coil and the solder applied to the outside of the coil. This resulted in all the solder on the bridging wire being held on the outside, so that none reached the line wire. There were therefore loose connections between the bridging and the line wires. The proper method of connecting the bridging wire is shown in Fig. 2. By leaving plenty of surface on the line wire, between the turns of the bridging wire, solder will take hold of both wires equally well and a good joint will be made.

Soldering Kink No. 46

To Keep Telephone Joints from Rusting Out.

A galvanized iron wire will last just as long as the galvanizing lasts, as soon as the zinc coating or galvanizing is penetrated the iron begins to rust and is soon eaten away; many men when putting up a telephone line will bruise the galvanizing at each tie, or will use acid when soldering joints and failed to wash it off. If NOKORODE is used there is no necessity to wash it off and a perfect joint is assured without any possibility of rust. TELEPHONY PUB. CO.

Soldering Kink No. 13

Soldering Terminal Lugs:—In soldering terminal lugs on wire those who have experienced any inconvenience from solder running over the outside of the lug and the latter becoming oxidized from the flame, can apply the following rule to advantage. Tie a small piece of asbestos sheet around the top edge of the lug with wire and melt solder in the lug in the usual way, only do not fill it completely, but have it about two-thirds full. When hot enough, the wire end is inserted and the solder rises in the lug to the top. If it should overflow, the lug does not catch it, as the asbestos acts as a protector.

To polish off the oxidized appearance, I carry a small portion of cleansing powder such as Dutch Cleanser, Sapolio, or Bon Ami, which, rubbed on with a damp cloth removes the tarnish as well as the remainder of burnt lacquer on the lug, and gives a good polish. H. PICCARD.

Soldering Kink No. 14

Fishing Conduit:—In fishing wire in conduits, when other schemes to get the flat steel snake wire through the pipe failed me, I have sometimes saved the day by soldering a little ball of lead solder about a quarter of an inch in diameter on the hook at the end of the snake, leaving part of the hook exposed. In the open part of the hook not covered with lead, I tie a couple of loops of twine. The theory applying to this is that the flat edge of the end of the snake tends to catch in the space in an elbow where the pipes do not butt together; but the ball on the end of the snake makes the latter slide over the joint in the pipe without catching.

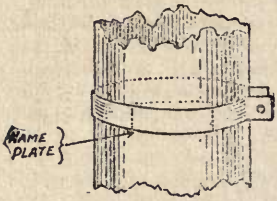
If the snake still fails to go all the way through the run of the pipe, another snake with an open hook is introduced at the other outlet and passing the ball of lead, the hook on this when pulled back, catches in the cord on the first snake, and pulls the latter safely through, so that the wire can then be pulled in. H. PICCARD.

Soldering Kink No. 15

Convenient Terminal Connector:—I recommend this lug to anyone who does outside testing with portable instruments, and who has been bothered by the wire breaking off at the terminal. In making leads skin the insulation off the stranded wire for about two inches, place end in vise so that skinned end is free, and wind No. 18 or 16 bare copper wire spirally around the skinned end, winding about three turns around the insulation to keep the wire from unwinding. Solder an inch of the terminal and tape the unsoldered part to about an inch over the insulation. The unsoldered part will act as a spring. CHARLES RIEMENN.

Soldering Kink No. 33

To Solder Brass Name Plate on Nickel Plated Shell.



There is one job, however, that caused us considerable trouble until we hit upon the following method:

The shell is polished and nickel plated. The point was to affix the name plate without having the solder and acid run out from under the plate on to the shell. Solder will show through nickel, and leave an unfinished appearance.

We first rolled the plate to conform to the circumference of the shell. On the back of the plate was spread the Nokorode paste, just enough to cover it. On to this was sprinkled some solder filings, prepared for the purpose. The name plate was placed in position and held firmly by a brass band arranged with a clasp to tighten on the side. The band was the same width as the plate and made from 20 gauge metal. The blast was then applied to the band and the heat allowed to penetrate the band and plate and run the solder. The whole outfit was then cooled in water, the band removed, and no sign of solder around the edges.

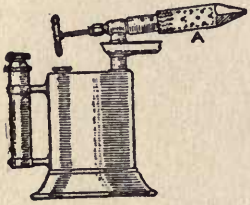
In using acid, the liquid would naturally run down the shell to the lowest point carrying the fine particles of solder with it. By using Nokorode paste this was obviated, as it not only remained in place itself, but held the solder as well, until set.

The same method, with slight changes, could be used on flat work.

THE BARLOW COMPANY, Holyoke, Mass.

Soldering Kink No. 50

Copper Soldering Point on a Blowtorch.

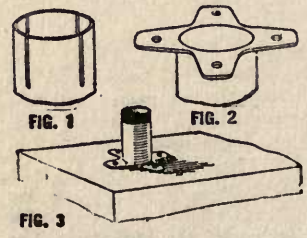


The ordinary blowtorch, with the burner end equipped with a copper point, makes an excellent soldering device. The point can be easily kept at the right heat and there will be no want for hot coppers. The end of the burner is threaded on the outside and a hole is drilled in the copper point and threaded to match. Small holes are drilled in the copper in the same manner as in the burner to make vents for the flame.

JOHN GERRER, "Popular Mechanics."

Soldering Kink No. 66

Connecting a Pipe to Sheet Metal.



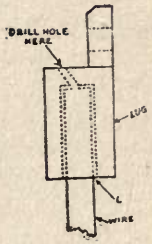
The end of the Pipe as it is prepared to be Rivited on the Sheet Metal.

In the absence of a waste nut, an iron pipe can be easily fastened to sheet-metal work, as shown in the sketch. The end of the pipe, Fig. 1, is slotted with a hacksaw to form four projections, which are turned outward and their ends rounded, as shown in Fig. 2. The face of the projections are tinned and then riveted to the sheet-metal surface, as shown in Fig. 3. After soldering the joint, it will be as good or better than if a waste nut had been used.

POPULAR MECHANICS.

Soldering Kink No. 42

Soldering Wire Lugs which Project Downward.



Your offer of one (1) dollar for solder kinks noted and would state that in securing lugs to wire when wire is too short to allow us to turn lug over to run solder in, that we drill a hole in lug near closed end, stick a piece of asbestos over wire, place lug over bared part of wire and fill lug with solder through hole which we have drilled in same

F. W. RIDGWAY, Freeport, Ill.

Soldering Kink No. 44

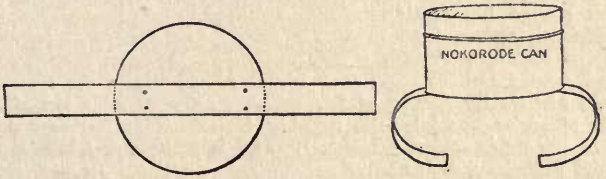
To Stop Spattering Solder on Finished Floors when Hanging Fixtures.

I find that when hanging fixtures in a finished house tissue paper over a piece of heavy wrapping paper makes the best kind of a protection for the floors or carpet. By using the paper which comes around the fixtures from the supply house this makes a convenient and inexpensive protection for floors. The tissue paper prevents hot solder from spreading and flying around as it will if it drops on a hard paper, and the thick tough paper underneath prevents the solder from striking through.

Tissue paper may also be used to advantage to lay over the canopy, arms, or other parts of large ceiling fixtures to catch any solder that may drop. FRANCIS H. NORTHROP, Wilton, Conn.

Soldering Kink No. 43

A Nokorode Wrist Box.



Enclosed please find a rough sketch of a 2 oz. can riveted to a clip that is formed to fit the wrist. The can being filled with NOKORODE SOLDERING PASTE.

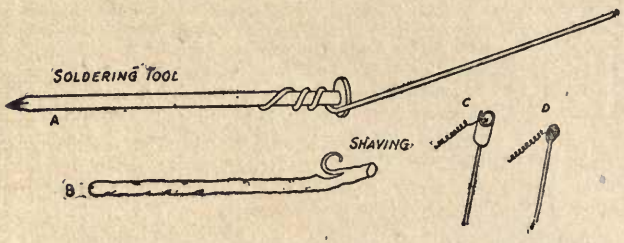
Our workmen use these for soldering and in doing so lose no time, soldering one joint after another without stopping to pick up the can.

This idea of my own if known would be greatly appreciated and especially by users of "NOKORODE," because it will not melt in summer heat and run, also because it does not corrode joints, being in paste form makes the outfit surpassing.

JOHN A. COWING, Cleveland, Ohio.

Soldering Kink No. 36

Soldering Break in Telephone Receiver.



Certain telephone receivers break down at the coil terminal. The proximity of the coil and the narrow space make the soldering somewhat difficult. In place of a torch and a jeweler's soldering iron I now use an iron spike shown at A, which can be heated in a convenient stove. From a piece of No. 8 wire solder I cut a small shaving and roll it up into the form of a sleeve or loop. After wrapping the fine wire of the receiver around the terminal I slip the sleeve of solder referred to above over it all, add a little "Nokorode" paste as at C, and apply the heated spike carefully with pliers and we have the finished result at D.

HENRY GRANT NEWELL, Le Raysville, Pa.

Soldering Kink No. 49

A New Kind of Soldering Iron.

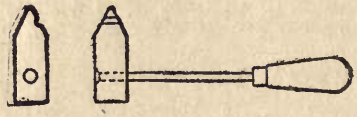


Fig. 1.—*Soldering Iron.*

I have found the soldering copper illustrated here to have several advantages over the regular straight tool, especially when wire joints near a ceiling have to be soldered. By the use of a tool of the kind illustrated I have saved myself from many a burn which would have been inflicted by falling pieces of hot solder if a straight soldering iron had been employed.

In making this tool I took an ordinary straight iron and removed the copper portion from the stem. I then drilled a hole through the copper as indicated, making the hole slightly smaller than the rod to be inserted. The rod was then filed to a slight taper, driven through the hole and riveted on the end. Then I filed a groove crosswise in the copper near pointed portion, the purpose of this groove being to hold the melted solder, which otherwise would have a tendency to roll off as fast as applied.

In using this soldering iron the groove is filled with solder and held parallel with the wires to be soldered. Thus the hands are kept well out of the way of any metal that may fall.

This iron can be used rather conveniently as a hammer also when a better hammer is not at hand. HENRI PICCARD, N. Y. City.

Soldering Kink No. 37

Railway Telephony.

In depots, towers and other buildings adjacent to railway tracks constant trouble is experienced due to vibration causing loose connections at points where the wires terminate under screws and on binding posts.

Wherever possible soldered connections should be used.

TELEPHONY PUBLISHING CO.

Soldering Kink No. 58

Soldering Badly Corroded Wires.

It is a proposition to solder two stranded conductors together or into a lug when they are composed of from 50 to 150 small wires such as lamp leads for moving picture machines, etc. Some are always badly corroded and it is next to impossible to scrape them to make a good job of it. After removing the insulation put the wires in a solution of nitric acid 25%, water 75%, for about a minute. This may be in a small bottle to be convenient. Then thoroughly wash wires with water and dry. They are now very clean and bright and can be easily soldered with Nokorode and solder, preferably using an iron or gas jet.

HARRY METCALF.

Soldering Kink No. 60

Rusted Telephone Joints.

In less than six months on one small telephone exchange practically every joint in a 14-mile metallic line had rusted out. New joints were promptly cut in, but in a few months these were gone. The trouble was found to be due to the use of soldering acid when making the joint, and the acid was not properly washed off. Galvanized iron will last just as long as the galvanizing lasts. As soon as the zinc coating or galvanizing is penetrated, the iron begins to rust and is soon eaten away. Every man who has put up a wire fence knows this. Yet these same men, when putting up a telephone line, will bruise the galvanizing at each tie, or will use acid when soldering the joints. Nokorode Soldering Paste should be used on all lines and can be used to tin over these bruised places and does not require cleaning after use, because it does not corrode.

TELEPHONY PUBLISHING CO.

Soldering Kink No. 55

Soldering Connection to Dynamo Brush.

Usually by the time the "Pig Tail" or woven wire becomes broken off at the dynamo or motor brush the copper plate to which it is soldered is almost gone or the brush too oily to solder again. When a quick job has to be done the wires may be scraped bright and a little Nokorode applied. Drill a ¼-inch hole thru the brush or into the end of it and run hole full of molten solder and put the wire into this, and when set the job is done. I have seen this tried on machines up to 15 K. W. and know it is satisfactory for any small dynamo or motor. HARRY METCALF.

Soldering Kink No. 62

Cable Splicing.

It is necessary, or is the custom, with cable splicers to use soldering flux to solder the wires and tallow on the sheath to make the wiped joint. I have found "Nokorode" superior to tallow for lead wiping and use same altogether. This obviates carrying two kinds of flux for one job, which will be appreciated by one who has much aerial work. It also saves time.

HARRY METCALF.

Soldering Kink No. 69

Stopping Leaks in a Tin Roof.

FIG 1

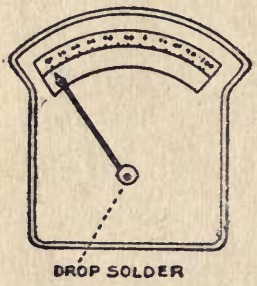
FIG. 2

The usual method of fastening roofing of any kind is to drive a small nail through a tin disk and the roofing into the sheathing beneath. When a tin roof fastened in this manner bulges, it will draw out the nail, and the expansion and contraction of the metal will leave the nail and disk in the position shown at Fig. 1. If a screw, brass or iron, is used, this difficulty can be prevented. After the disk is screwed down, solder the head of the screw to the disk, and the edge of the disk to the tin roofing, as shown at Fig. 2.

A leak can be stopped by fastening one of these disks over it in the manner described. In either case, the disk should be given a coat of paint after it is fastened down.

POPULAR MECHANICS.

Soldering Kink No. 68



Balancing a Voltmeter Pointer.

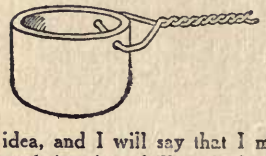
I have found an ideal way of making a Volt or Ammeter read correctly, when testing and other ways fail.

First—Clean the bottom of the pointer, and then apply a small quantity of "Nokorode" and after a drop of solder.

You will find that the pointer will come to its proper place after this treatment. FRANK SCOTT.

Soldering Kink No. 41

A Home Made Device for Soldering Fixtures.



I hand you herewith a soldering kink which I have found very useful in fixture hanging, as it allows of soldering the connections without smoking or damaging the most delicate finish on ceilings.

From the rough sketch you will get the idea, and I will say that I make the cup from cast iron pipe cap, of ¾ in. or 1 in. size, drilling it for 2 holes of proper size to take No. 12 Galv. Telephone Wire, which is passed through, brought back and twisted together to form a handle.

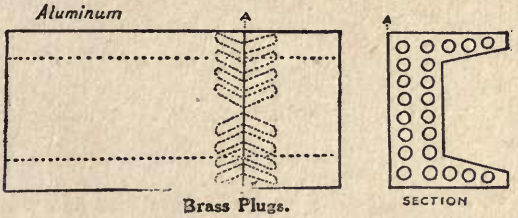
Fill the cup with solder and when hot it will solder several joints without reheating. The connections are made in what we call a pigtail with the ends pointing down, treated with Nokorode, and dipped in the cup. M. F. LIBBEY, Whitefield, N. H.

TEACHING THE BOYS TO BE USEFUL
AND SAVING.

EVERYONE CAN SOLDER.

Soldering Kink No. 51

How Aluminum may be Soldered with Nokorode.



Brass Plugs.

Drill as many holes as possible at a slight angle and drive in tight brass plugs, then file or trim the plugs evenly or a little below the surface of the aluminum. Next coat the surface with NOKORODE and apply the solder with the hot soldering copper. Then put the two surfaces together; heat and treat it the same as copper or brass.

The cut shows how an aluminum pattern is being lengthened by soldering a piece to it.

OTTO CARLBORG, Providence, R. I.

FIG. 2.

Soldering Kink No. 30

To Solder Tubular Radiator.

When one of the inside tubes springs a leak and it is impossible to get at it to solder, turn radiator up side down, cut square hole in bottom of radiator directly under leaky pipe; then dip small piece of waste in "Smooth on Iron Cement" and push it into the pipe being sure to get it clear to top of pipe. (To do this get a rod the right size and mark on it the length and then drive plug in with rod until mark is even with other end of tube). Keep on this way until you have a plug ½ in. long at each end of pipe. When cement is dry this pipe will be same as solid at each end. Then cut a piece of brass about ½ in. larger each way than the hole (Fig. 2.) clean, and solder it over hole. This will make a first class job and will not be noticed.

GLENN METCALF, Blandinsville, Ill.

Soldering Kinks No. 39

Wire Joints Soldered with Heat from a Motorcycle Engine.

The "telephone trouble shooter" who rides a motorcycle can make use of a hot engine for heating a soldering iron. When copper wires are to be soldered before placing them on a pole or in a box lay the joint on the hot cylinder until it melts the solder.

Fuses and telephone transmitters can be repaired in this manner. I have many times lighted my alcohol torch with a spark from the spark coil by touching it to the frame of the motorcycle.

C. F. HIGBY, "Popular Mechanics,"

Soldering Kink No. 72

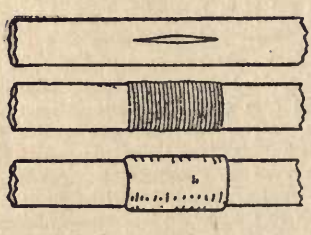
Starting a Bolt in a Difficult Place.

Recently, while working on an automobile, I found it difficult to get a bolt started in its place, and when I had about decided to remove the other parts to enter the bolt, I hit upon the following scheme of overcoming the difficulty. A piece of wire was procured and one end lightly soldered to the bolt head.

This served as a handle for placing the bolt, and was easily removed by giving the wire a few turns. The same means can be used to enter bolts and pins in places not easily accessible, the time of preparation being small as compared with the practical value of the device. POPULAR MECHANICS.

Soldering Kink No. 61

Repairing a Crack in the Pipe of a Stanley Automobile.

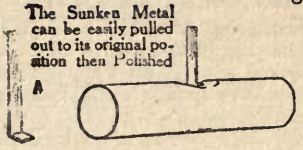


I had a very bad crack in the steam pipe in an automobile which I was repairing. The crack was 2½ inches long, and was spread apart in the center about ⅛ of an inch. I did not want to take the pipe out as that would necessitate taking the engine apart, and I would also have to wait a month before I would get it back from the factory.

First I tried soldering with resin, and filled up the crack with solder, then I started up the boiler and got up about 100 pounds of steam in the pipe, but it started to leak, as the pressure was too much for the solder. I then decided to try another idea, as I had only 100 pounds pressure in the boiler and had to get 250 pounds.

This time I cleaned up the pipe very clean and got some of your "Nokorode" and spread around the pipe where the crack was, then took a piece of wire about 1-32 of an inch in diameter and wound it tightly around the pipe where the crack was, after which I put another coat of "Nokorode" on the wire, then added another coat of solder, started up the boiler with 150 pounds of steam pressure, and finding it did not leak, I kept adding more pressure of steam, until I had reached the maximum rate, which is 250 pounds, and the automobile has been constantly in use for the last six months. JOHN M. CRAIG.

Soldering Kink No. 63



Removing Dents from Thin Metal Articles.

Dents in any kind of sheet metal, especially the brass fixtures of an automobile are exceedingly difficult to straighten out and make a neat appearing piece of work. One of the best methods of doing this is to make a clip of metal, steel, or brass, as shown at A in the sketch, and solder the small part turned at right angles to the metal in the dent. The sunken metal can then be pulled up, the clip unsoldered and the surface polished. It is not necessary to drill a hole in the fixture, and the surface can be smoothed up like new.

POPULAR MECHANICS.

Soldering Kink No. 67

"Better Than a Nut On a Cyclometer Striker."

Most of the users of cyclometers on a motor cycle or bicycle find it a hard proposition to keep the cyclometer striker in place on the spoke, because the repeated sharp blows that occur when riding fast will loosen up most any screw, and turn the striker around, often breaking the striker entirely.

I have found a very good way to overcome this difficulty by fitting a piece of hard leather on the hub end of a broken bicycle spoke, which was cut about three inches long. The other end of this piece of spoke was wrapped tightly around a spoke in the wheel in the proper position. Then a little "Nokorode" was applied and both soldered tightly together by using a blow torch. Leave a free end of about an inch to give a little spring to the striker to soften the shock of the blow. If the job is well done it will stand up very well.

H. C. WING.

SCHEME FOR PRESERVING TINNING ON SOLDERING IRON

If you have trouble with the tin burning off when heating your soldering iron, get a plumber to cut a piece of ordinary iron pipe about 1½ inches or 2 inches inside diameter and about 5 inches or 6 inches long. Lay this iron pipe on top of the gas stove or in the coal stove in such a way that the flame of the heat will be on the iron pipe, then slip the soldering iron inside the iron pipe, which will completely protect the copper.

It seems that the pipe prevents the corrosive action of the gas and flame from eating the tinning from the copper.

This is a simple kink, but remarkably effective.

Soldering Kink No. 2

Stopping a Leak in an Automobile Radiator.

Gentlemen:— Enterprise, Ala., March 23, 1912.

In soldering the connections of the water supply to an automobile radiator, the connections had been soldered several times; from the jolt of the machine it would break loose; the radiator being springy would leak with packing between the radiator and water supply.

I bolted the connection to the radiator, using a piece of packing, then after repeated efforts to solder over the packing with the products I had on hand and failing, I used Nokorode and it held all right; by catching the flange of the water supply across the edge of the packing to the radiator with solder holds it steady and keeps it from shaking and causing the packing to let it leak.

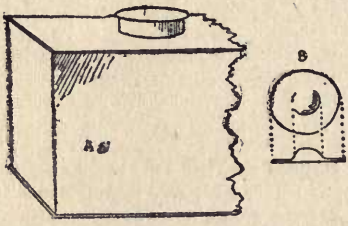
The soldering would not hold until using Nokorode paste.

I am figuring on ordering some as I have constant need of soldering in my business.

ENTERPRISING PLUMBING & HEATING CO., H. H. Bailey.

Soldering Kink No. 45

To Repair Leak in Gasoline Tank without Removing from Car.



I had a leak around rivet in the gasoline tank of our car and could not repair same without removing tank from car which would require the removal of the body, so I tried soldering from the outside but with no results. I then made a patch from a small piece of sheet copper and peining it so that it was dished quite a little, thoroughly tinned the inside of patch, first applying NOKORODE, then after applying NOKORODE to the tank around the leak, I next heated my copper very hot and placed the patch on it and put it in position, holding it there and pressing it hard enough to work out all surplus solder and after smoothing up the edges my job was as tight as could be wanted by anyone.

Would advise those who may try this to have their tank absolutely dry and free from gas as the result of having it otherwise would no doubt be disastrous. IVAN R. LUCAS, Bradford, Pa.

Soldering Kink No. 48

To Repair Gasoline Feed Pipes.

Fig. 3.

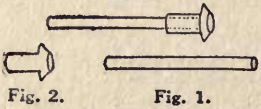


Fig. 2. Fig. 1.

The following will be found very useful in soldering connections on the gasoline line on gas engines and automobiles.

First thoroughly clean end of pipe (Fig. 1) and tin end back for about an inch. Then clean small end of sleeve (Fig. 2) and tin end, inside if possible. Next hold sleeve with pliers and pipe in hand and hold before flame of torch, and as the solder melts slip sleeve over pipe. Then run a drop of solder around pipe at end of sleeve and you have a first class gas tight joint shown at Fig. 3. For a neat job finish with a strip of emery cloth. Use NOKORODE and it will not corode.

GLENN METCALF, Blandinsville, Ill.

Soldering Kink No. 35

To Solder Cable and Parts Set in Hard Rubber Without Melting the Rubber.

To solder cables to posts set in hard rubber connectors in automobile electric lighting work, without melting the rubber, hold the rubber plug by wrapping it in a wet cloth, use NOKORODE paste and solder with a small iron.

HERBERT W. KIMBALL, Haverhill, Mass.

Soldering Kink No. 19

Repairing a Crack in Cast-Iron Pipe or Automobile Cylinder.

A crack in a cast-iron pipe or a gasoline-engine cylinder, caused by freezing can be repaired in the following manner, if the pressure the part has to withstand is not too great. Procure some sulphate of copper, commonly known as bluestone, and dissolve it in water. Clean the edges of the crack well with a file or sandpaper. Paint the iron with the solution several times until there is a coat of copper on it. The copper surface can be easily soft soldered which will produce a satisfactory repair in many cases.

WM. W. GRANT.

Soldering Kink No. 28

To Solder New Thread on Grease Gun.

FIG. A.

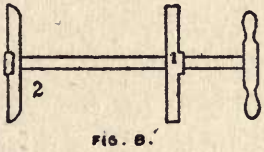


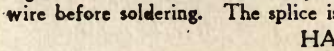
FIG. B.

When the threads on the cap of a Grease Gun become so worn that it jumps threads, remove plunger and unscrew cap. On the inside of cap solder a nut the same size and thread as the screw. This will make the gun good as new. Be sure to solder the nut to the inside of the cap as it will stand more direct strain than on the outside.

GLENN METCALF, Blandinsville, Ill.

Soldering Kink No. 32

Making a Splice in an Armature Coil.

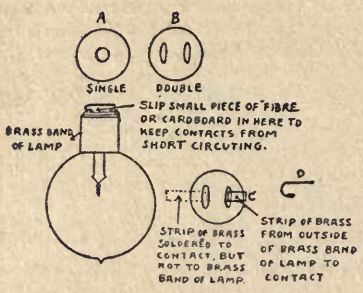


"When it is desirable to make a splice in an armature coil where large wire is used, bevel the wires as shown and with Nokorode and solder tin the surface with solder, then solder them together. If there is room the joint is improved by wrapping it with fine wire before soldering. The splice is then wrapped with insulating material."

HARRY METCALF, Blandinsville, Ill.

Soldering Kink No. 77

How to Make a Double Contact Light Bulb Fit a Single Contact Fitting.



Most electric light bulbs used in automobiles are of either single or double contact type (A) or (B).

Not being able to secure one of the single contact bulbs to make a replacement, I hit on a scheme to alter a double contact so I could use it.

I first soldered a tiny piece of sheet brass ⅛ inch by 1-16 inch from one contact to outside of the base, using "Nokorode," of course (C).

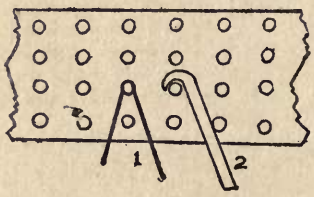
Next I soldered another strip of sheet brass about ¼ inch by ½ inch to the opposite contact. After the solder had set I bent this piece back over the end of the socket into shape, as shown at (D).

I then placed a little piece of fibre (cardboard would do) between this and the other contact, for insulation, and the job was completed and answered the purpose as well as a single contact bulb.

H. C. WING.

Soldering Kink No. 93

Repairing an Automobile Radiator.



While trying to decide upon the best way to repair the tubes in a radiator that had been frozen, it occurred to me that it might be possible to solder the leaks with a piece of bent heavy copper wire for a soldering iron.

The radiator was drained and then dried by careful use of the flame from a blow torch.

It was then filled slowly until a damp spot appeared showing the exact spot of the leak.

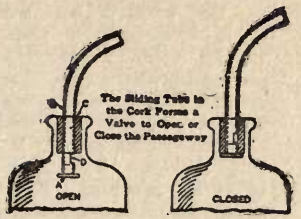
Again the radiator was drained and the spot polished with a piece of emery cloth, as shown at (1), and soldered with a piece of heavy copper wire for an iron, bent so as to come in contact at the leak, as shown by (2).

The radiator was again dried and tested for another leak. In two hours' time ten leaks were repaired. The radiator had not been removed from the car.

It never leaked again to my knowledge. H. P. CORBIN.

Soldering Kink No. 73

Priming Bottle for a Gasoline Engine.



A safe and convenient stopper for a bottle holding priming gasoline for an automobile engine is shown in the illustration, in which C is a common cork thrust into the neck of the bottle flush with the top and having a hole previously burnt through its center just a trifle smaller and to conveniently admit a piece of bent tubing. A piece of steel umbrella tube is quite satisfactory, says the Automobile Dealer and Repairer. At its straight end a slit, D, about ¼ inch long, is filed, and a plug, A, with a projecting lip, is tightly fitted into the end.

Solder this plug carefully to make a tight fit.

The head of a 20-penny wire nail will be found to fit snugly and serves the purpose quite well. To secure the cork in its position it is best to bind it down with twine or wire to the neck of the bottle. When the bottle is tilted the gasoline will flow through the opening, D, and out through the tube, B.

Evaporation and flow of the gasoline is prevented by drawing the spout up until the flange, A, is tight against the cork.

It will be observed that the opening, D, will thus be closed, and no amount of rough shaking will make the gasoline escape. A stopper of this kind is very convenient to handle with gloved hands or cold fingers. POPULAR MECHANICS.

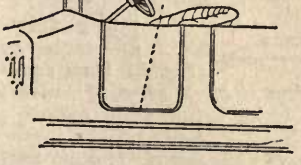
Soldering Kink No. 74

To Solder a Leak in the Tubes Honeycomb Radiator.

Locate the leak, clean thoroughly with a small file, taking pains to have the spot clean and bright. Apply a little "Nokorode" Soldering Paste and with a torch and common blow pipe run enough solder over the leak to make a smooth, even surface. (If the leak is not in the tubes a common soldering copper will answer.) GLENN METCALF.

Soldering Kink No. 85

To Close Cracks in Automobile Body.



When repainting a car the binding strips (A) around the doors and edges are often loose, leaving a crack which the paint will not fill.

Clean the edges along the crack, apply "Nokorode" and solder the strip to the body.

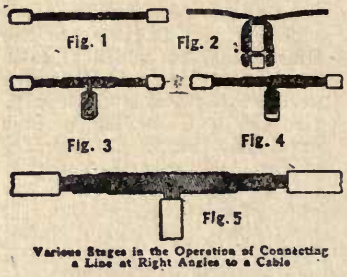
This will make a smooth surface and the paint will in this way cover the crack and the solder will also keep the strip from getting loose.

This of course applies only to metal bodies.

GLENN METCALF.

Soldering Kink No. 75

Tapping a Large Electric Cable



Various Stages in the Operation of Connecting a Line at Right Angles to a Cable

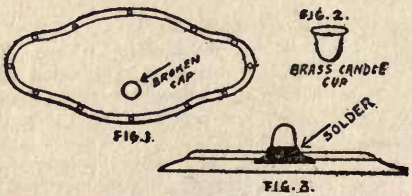
On construction work it is frequently necessary to tap a line at right angles, and where the line is made up of several strands the proper way to make the connection is shown in the sketch. The insulation is removed, at the place for connection, from the straight-line cable for about 3½ in., Fig. 1, and on the end of the line to be connected for about 5½ in. These lengths are for a cable of 19 strands. The wires are then thoroughly cleaned and six of the strands on the end of the cable are turned down on each side of the cable from the outer layer, and three each way, at right angles, from the next layer, Fig. 2, whereupon the center wire is cut off.

Wrap the three strands each way, as shown in Fig. 3, and draw them tightly around the bared straight cable, and wrap the six strands each way on top of the three strands in the opposite direction, as shown in Fig. 4. It is best to wrap each wire separately in the latter operation. Be careful to have the strands lying close together and drawn tightly around the cable. The finished wrapping should appear as shown in Fig. 5. Apply "Nokorode" and solder by pouring the melted metal on the joint.

Any traces of the soldering flux may be removed after the joint is soldered by an application of ammonia, which will clean the joint and keep it from corroding. Oiled linen makes a good substitute for the expensive tape on the joint, and this is then covered with the usual application of Friction Tape, well painted. For wires of different sizes, the insulation must be removed for a different length, but in no case are any strands removed except the center strand as stated. POPULAR MECHANICS.

Soldering Kink No. 97

Repairing Aluminum Gear Case.



On a gear case where the shaft protruded 1 inch beyond the face, the cap in some manner became broken.

To repair this I took a candle cup (Fig. 2) from an old gas fixture, and after first soldering a small piece of brass in the bottom of the cup to make it tight, I tinned the outside of the flange or rim.

Then I put the cup in the case with the rim inside, as in (Fig. 3); then with a little "Nokorode" and blow torch I flowed solder around the outside of the cup. As the solder would not hold to the aluminum, it held to the brass, filling up the space between the case and cup, making a tight job.

F. J. ALTERSITZ.

HANDY IN THE OFFICE.

WHEN THE DOOR BELL FAILS
TO RING.

Soldering Kink No. 76

Tinning for Drive Fits in Machine Shop.

In many cases where a drive fit is too loose to be passable, I have saved the piece by tinning the surface of the piece to be driven, with solder and wiping it clean while hot.

This increases the diameter enough so that a drive fit may be made.

H. P. CORBIN.

Soldering Kink No. 86

Repairing a Broken Steel Fishing Rod.

To fix a broken steel fishing rod, I proceeded as follows:

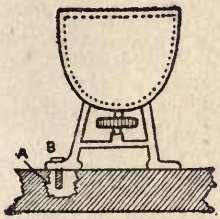
In the hollow centre of the rod I put a piece of steel rod of the right diameter. I then cleaned off the paint from the broken part and wound it with fine copper wire each side of the crack, as shown in the diagram, and then soldered.

This made a good, solid joint and is as good as new.

HERBERT GIEHLER.

Soldering Kink No. 95

Bolting Machine to Concrete Floor.



We had considerable trouble to securely fasten a centrifugal clothes wringer to a cement floor.

The floor was poor cement and the holes in it were too large to use expansion bolts, so they had been leaded in, but the vibration soon loosened the bolt in the lead, but the lead seemed to be solid enough in the cement.

I thought of tinning the bolts to make them stick to the lead, and tried this method, using "Nokorode" as a flux, and thoroughly tinned the four of them.

After removing the old lead and making a template to hold the bolts, filled the holes with lead.

Instead of putting the bolts in, as shown in sketch, I put them in head down with a large washer on lower end which was also tinned.

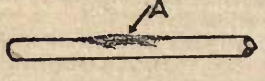
I had the lead very hot and also some "Nokorode" on bolt before I poured same.

When set good I bolted the machine down. This was about eight months ago and same has given no trouble since, and as the lead is soldered to the bolts and cannot work loose, I think this is a good method where the holes are too large for expansion bolts and can be applied to motors, engines, etc.

HARRY METCALF.

Soldering Kink No. 124

How Nokorode Saves a Rusty Telephone Wire.



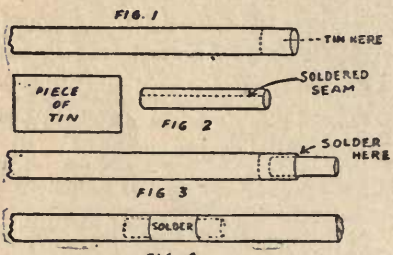
When I solder a joint on an iron telephone wire or jumper, especially if the wire has become rusty as at (A), I take a small or medium size flat file to clean the wire with and put on a little "Nokorode," use a blow torch or soldering copper and I get a first class joint.

A line wire files easily when there is tension on it.

JOSEPH B. SILLDORFF.

Soldering Kink No. 132

Soldering Iron Replaces Tap or Die.



How the soldering iron will take the place of Taps or Dies in joining two pieces of lead or iron gas or water pipes together, without the aid of any other tool, and without wiping the joint.

To make a joint in an iron pipe it has been necessary to thread both ends and connect with coupling.

Here is a way any person can make a strong joint without threading the pipes—with the use of a soldering iron and solder and "Nokorode" Soldering Paste.

Clean both ends, inside and out, of the two lengths of pipe that are to be joined together about one-half inch from the end by filing, scraping or using emery paper, apply a little "Nokorode" Paste, and tin them well, as shown in Figure (1).

Cut a piece of tin about three inches long, or according to the length of the splice in pipe, and form it into a round tube same size in diameter as the inside of the pipes that are to be joined together, then apply a little "Nokorode" Paste, and solder seam, as in Figure (2).

Push the tin tube about one-half its length into one end of pipe and solder it at joint, as shown in Figure (3).

Next put the other end of the pipe over the tin tube and leave about three-eighths of an inch opening between the two pipes, or a larger opening if it is necessary, and solder it the same as in Figure (3).

Now on top of the tin tube that is left in the opening between the two pipes, fill in solder by bunching it around until even with the two pipes, and when cooled off file smooth, as in Figure (4).

If the pipe is in an upright position, it must be disconnected and laid horizontal. If pipe is in a horizontal position and too close to the wall, pull it out from the wall sufficiently to leave room to get all around it.

In soldering lead pipe heat the soldering iron so it will just scorch paper, to get the best results.

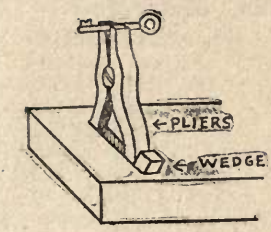
The above method makes a strong joint and uses about one-third the lead required by the old-style wiped joint.

It will be found that "Nokorode" Paste will work equally as well on iron or lead.

E. F. WILLIAMS.

Soldering Kink No. 96

Pliers as a Bench Vise.



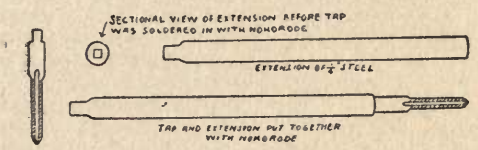
In the illustration is shown how a pair of pliers may be utilized as a substitute for a bench vise by cutting a slot through the bench, inserting the handles of the pliers and drawing up with a small wedge of wood.

This improvised vise will hold articles to be soldered with surprising rigidity.

B. W. VERNE.

Soldering Kink No. 82

Practical Extension for a Machine Tap.



3/16 Tap

Very often the repairman is required to drill or tap out a hole in a very inaccessible place, and no doubt the readers of "Soldering Kinks" would like to know how I tapped out a 3-16 in. hole in the bottom of a 5-16 in. hole 5 in. deep, that I could not reach from the opposite side.

The standard length of a 3-16 in. tap is only 2¼ in. To remedy this, I secured a 5-16 in. rod about 4½ in. long, drilled a 3-16 in. hole in one end ¾ in. deep, squared the opposite end, then put a small quantity of "Nokorode" in the hole I had drilled, also a small drop of solder, and then proceeded to heat the rod (holding same in a vertical position) until the solder was thoroughly melted, and then I forced the tap into the melted solder.

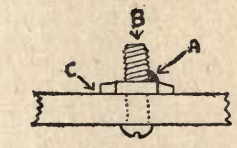
The rod and solder retained enough heat to flow the solder perfectly around the tap without drawing its temper.

In this way most any place can be reached so as to drill or tap out, simply by the use of an extension rod and a little "Nokorode."

H. C. WING.

Soldering Kink No. 88

Lock Nuts.



I find the following very useful in keeping small nuts in place and keeping them from unscrewing due to vibration:

My method is to apply a trace of "Nokorode" at the junction (A) and slightly solder same. Just a small quantity of solder is used.

If (B) happens to be cut off flush with top of nut, solder over very lightly.

Often an extra nut cannot be put on and riveting is bad if nut ever has to be removed.

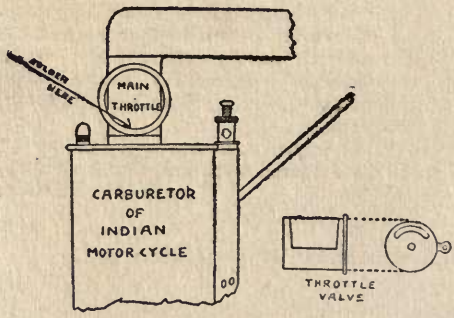
By my method, nut can easily be removed without hurting the threads the slightest, and the nuts will not work loose by vibration.

This is equally effective on brass, copper, iron, zinc and steel if "Nokorode" is used.

HARRY METCALF.

Soldering Kink No. 87

Repairing Carburetor on "Indian" Motorcycle.



After considerable use the main throttle becomes worn on the carburetor on the "Indian" motorcycle and leaks gas, while closed, upsetting the mixture of the pilot jet.

I have found a very good way to remedy this trouble is to take the carburetor apart, removing the throttle valve, then apply a little "Nokorode" to the lower part of the throttle case on both sides and proceed to tin same over with a very thin coating of solder.

After soldering same may be smoothed up with a jackknife or scraper and the throttle fitted.

The solder will force the main throttle valve against the upper side of the case where the seat is made, thus taking up all wear and making a gas tight seat again. H. C. WING.

Soldering Kink No. 110

Home Made Fault Finder.

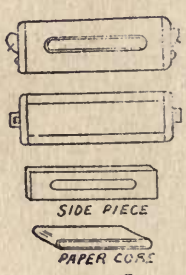


FIG. A

I am sending you a sketch of a cheap fault finder which anyone can make on short notice. I had to do it, as the electric light boys shot a 2,200-volt current into our cable.

This coil as shown by the sketch, weighs a little less than a quarter of a pound and was made of cigar box wood, glued together. The core is of No. 28 soft iron wire, such as is used by the florists. The wires are held in place by a paper wrapper, forming a tube that is glued to the side pieces to form the spool. Wire from an old ringer coil was wound on the core until the resistance was about 150 ohms. I have made several of these coils and no two of them have the same resistance, but they all work with the ordinary head receiver.

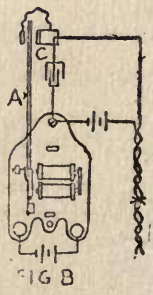
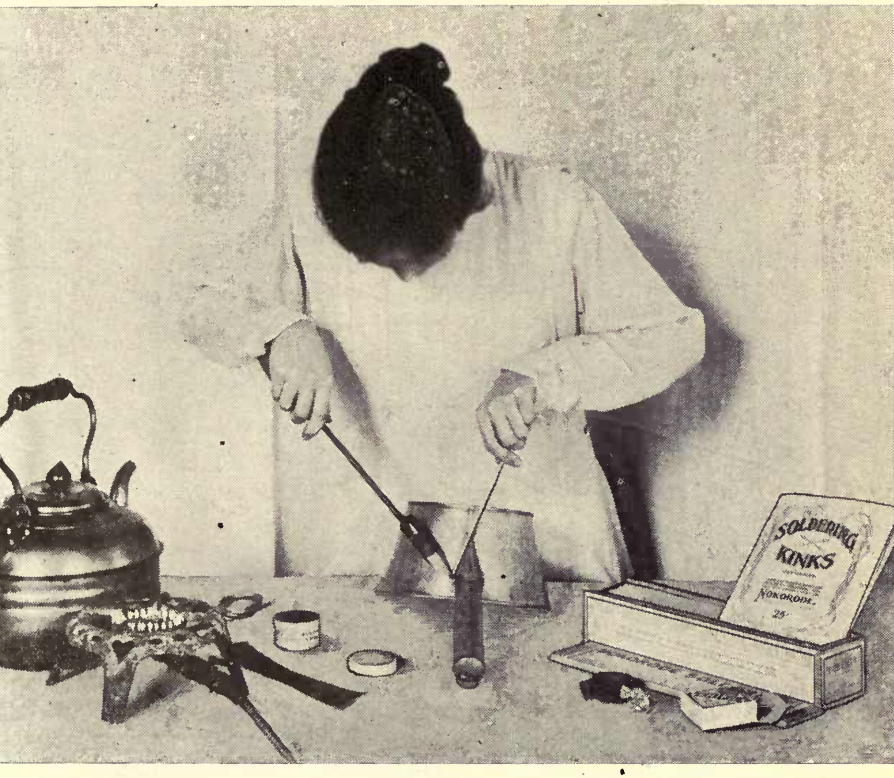


FIG B

The vibrator was made from an electric bell. A long piece of stiff iron wire was soldered to the armature, while the make and break contact was placed near the end with a condenser across the contact, to reduce the sparking.

The loudness of the tone will depend upon the amount of battery used. I have used 15 to 20 dry cells with good results. TELEPHONY.

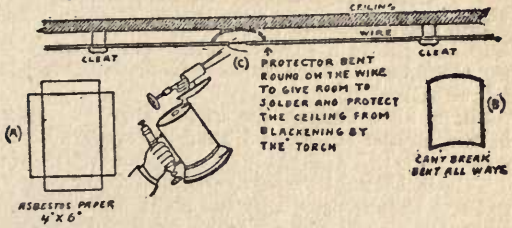


THIS LADY SAVED THE PRICE OF
A NEW DIPPER.

BOYS HAVE NO END OF FUN.

Soldering Kink No. 81

A Smoke and Fire Protector.



A smoke and fire protector for electrical and plumbing shops can be used in several ways.

It can be bent in all ways and won't break, and can be carried in the tool box or bag.

Take a piece of tin 5 in. by 7 in., and mark ½ in. from the edge all around (A).

Then take a piece of asbestos paper 4 in. by 6 in., lay it on the tin and fold the half-inch edges onto the paper so that it leaves a frame (B).

The protector may be bent around wires to give room to solder, and will save blackening the ceiling with a torch as shown at (C).

ANTONIO BIENVENUE.

Soldering Kink No. 78

Filling Hole in Boiler.

I had occasion to repair a galvanized iron wash boiler, and proceeded as follows:

The bottom of the boiler was badly corroded, and had a hole in it about ¼ inch in diameter. I found it almost impossible to fill the hole with melted solder and make it stay filled, so I took a brass paper fastener, such as are commonly used for pinning papers together, and after coating it with "Nokorode," inserted the prongs through the hole from the outside of the boiler, having first scraped a space about 1 inch in diameter around the hole on both the outside and inside of the boiler, and thoroughly tinning, using "Nokorode."

The enclosed sketch will indicate the appearance of a section taken through the center of the hole after the job was completed.

This job has proved satisfactory, and the boiler is now in service again.

WM. W. MILLER.

Soldering Kink No. 94

Repairing Flash Lights.

We all know that a flash light battery will often sweat or short circuit and will corrode the connecting wires inside of the case, thus making the flash light useless.

The way I repair them is by taking a piece of copper ribbon or wire and running it either on the outside or inside of the case, then applying a little "Nokorode" and soldering to the bands on the case.

I find that repaired this way the case is as good as new.

FRANK SCOTT.

Soldering Kink No. 120

Soldering Ground Connections.

Drill a small hole in the top of the rod about ¾ inch deep and put in a small quantity of "Nokorode," apply the flame of blow torch until hot and then melt full of solder.

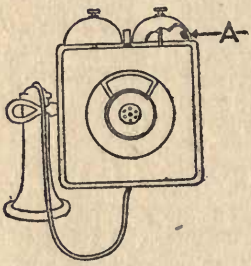
Put a little flux on the copper wire and insert it in the molten solder and hold it there until solder sets.

This is better than wrapping the wire around the rod and then soldering, as the flame does not come in contact with the surface to be soldered and does not oxidize same.

The solder does not run and it saves scraping the rod. HARRY METCALF.

Soldering Kink No. 122

To Change the Tone or Muffle Bells.



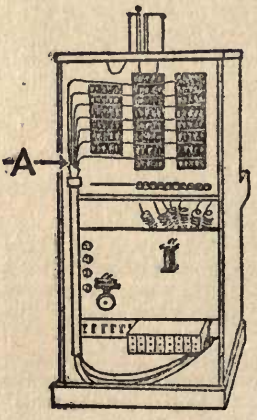
When there are several bells in the house or office which sound alike the tone may be changed by sticking more or less solder, according to the tone desired, to the under side of gong, as at (A).

The closer to the edge the more effective.

First scrape bright and apply some "Nokorode," and with a hot iron, melt some solder on gong. If too low a tone, cut or melt some away to suit.

If desired to muffle some more a larger quantity is soldered or until correct degree of muffling is obtained. HARRY METCALF.

Soldering Kink No. 121



Poor Soldering Flux Causes Cross Talk.

At one time I was ordered to trace cross talk on a board and found a case that kept me guessing for sometime, as everything appeared to be all right.

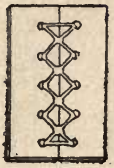
The cable to the cross connecting rack was annunciator wire, and on looking it over I found where someone had spilled muriatic acid over it while soldering the connections at (A).

No less than three cables were soaked in this way. Of course the part had to be rewired, and you can bet "Nokorode" was used on the rewiring.

TELEPHONY PUBLISHING CO.

Soldering Kink No. 79

Soldering Belt Lacings.



After lacing the belt with lacing wire I add a little "Nokorode" soldering flux, and then by the use of a hot iron I solder over the joints.

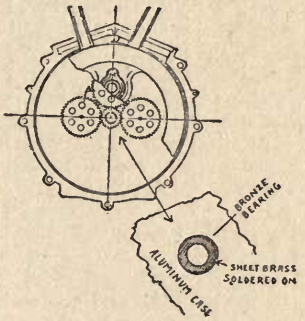
This makes a much stronger splice, and is a very good way of fastening the wire ends.

Am enclosing a sample, which will show very clearly how the splice is made.

QUIMBY SMITH.

Soldering Kink No. 80

To Take up Wear on Main Bearing on Indian Motorcycle.



On taking down a motorcycle engine recently I found one of the bronze bushings on the main bearing had worked loose and turned in the aluminum base, wearing it out of round badly.

Ordinarily this would mean a new crank case or reboring the hole and fitting a special larger bushing.

I hit on a plan that worked out fine, saving quite a bit of expense, as follows:

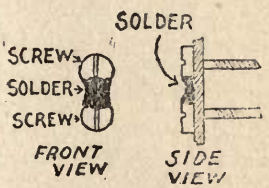
I first shaped a little piece of sheet brass to the outside of the bushing for about one-half its circumference, and after applying a little "Nokorode" to both the bushing and sheet brass, I sweated them together.

By careful filing and numerous trials I worked the bushing down to a drive fit and forced it into the case. The bushing is now more secure than before, as it is elliptical and cannot turn in the holder, even if it works loose.

H. C. WING.

Soldering Kink No. 112

Replacing Lock Washer on Telephone Connections.

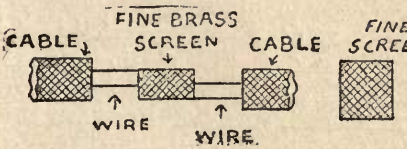


By soldering screws this way you do not have to use lock washers. Keeps screws from working out and coming loose for relays and other small parts.

LOUIS CONSARD.

Soldering Kink No. 113

Connecting Small Cables without Terminals.



This sketch shows how to connect two cables without using terminals. Take a fine piece brass screen, wind around cable, put "Nokorode" on and solder, this makes a very strong joint for small cable.

LOUIS CONSARD.

Soldering Kink No. 117

Applying Heat for Soldering.

When using the flame of a blow torch, if possible, heat NEAR the place to be soldered, as at (A), rather than directly on the place, as it will not oxidize and color so readily.

Where possible have the heat applied from the under side, it is much more readily conducted upward.

HARRY METCALF.

Soldering Kink No. 131

Soldering Steel Wires to Iron Rods.

I once had a job of soldering a piece of number 14 iron wire on about 50 ground rods.

Instead of using a blow torch or other ordinary means of soldering I carried the ground rods to a blacksmith and asked the smith for permission to use his vise, file and forge for a while.

I first filed all of the rods clean and wrapped the iron wire with several turns around the rods and snubbed the wire in the ordinary way.

When ready to solder, I heated each rod and wire at the point where the wire fastened to the rod until it was hot enough to melt solder.

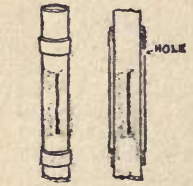
Care was taken not to heat the wire too much.

Applied a little "Nokorode" to the heated wire and rod and used ordinary half and half solder, turning it over and over, and a neat job of soldering was quickly done.

This is a quick way to do soldering of this kind even if you have only one or two jobs to do, but it saves a great deal of time if you have quite a number.

SAM H. SHUTT,
The United Telephone Co.,
Temple, Texas.

Soldering Kink No. 101



Repairing a Split in Water Pipe.

A lead pipe burst one Sunday noon leaving a split about 1 1-2 inches in length.

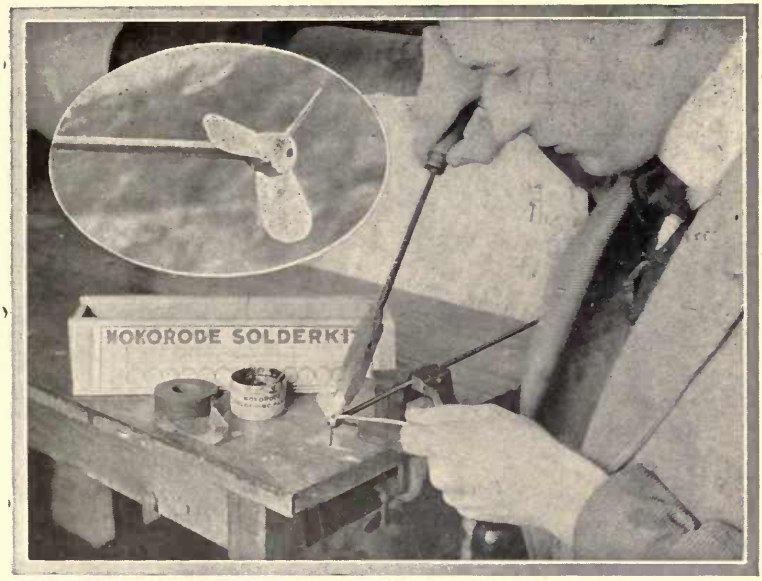
This required a wipe joint, but we could not get a plumber at that time and would have been without water if repairs had not been made, that were intended at the time to be temporary only.

Having dried the pipe well and cleaned it, I wrapped the pipe with adhesive tape, about five turns each, above and below the split. Then I placed a piece of stiff paper around the pipe on the two bands of tape so that the paper was held a little distance from the pipe. The ends of the paper were held with another turn of tape.

A hole was stabbed in the paper near the top and the space filled with hot lead.

After removing the paper it left a neat looking job which has proved to be as good as a wiped joint.

CHAS. H. RICHARDS, POPULAR MECHANICS.

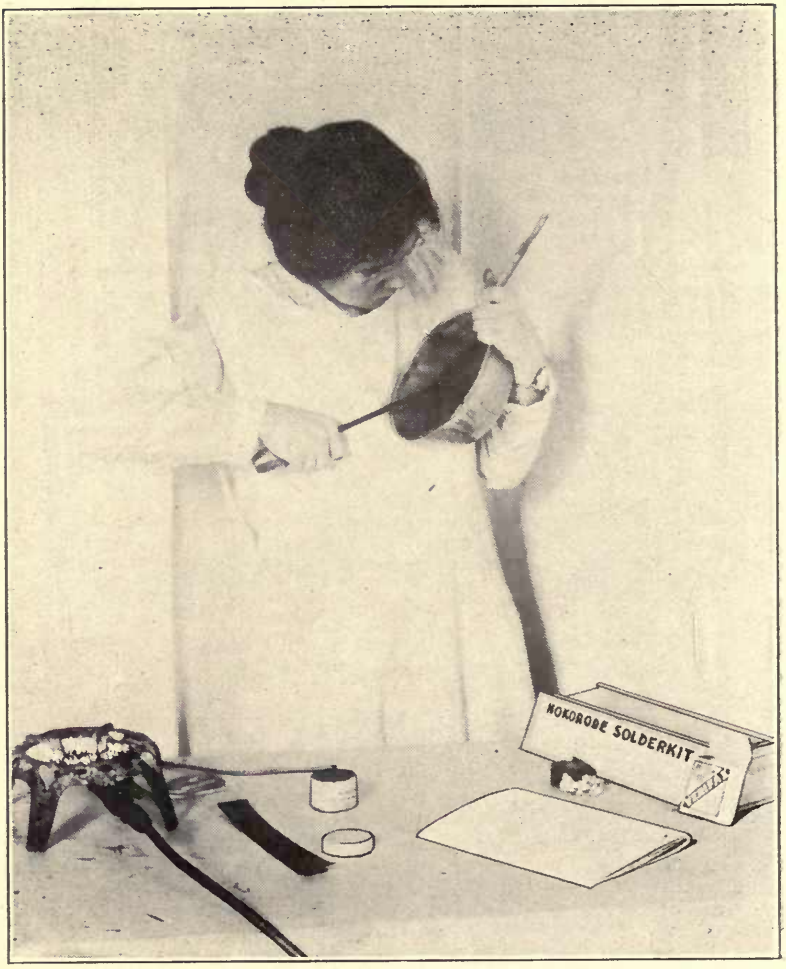


ALL BUT THE PROPELLER

The model was to be exhibited that afternoon. The only thing it lacked was a propeller. A casting was out of the question. The foundry wanted at least 24 hours for delivery, besides a pattern would have been necessary.

Three grooves were sawed around a length of brass rod and blades sweated into position with Nokorode. Slightly cleaned with emery cloth, it gave a workman-like appearance to the whole model, and all in less time than the construction of a pattern would have required.

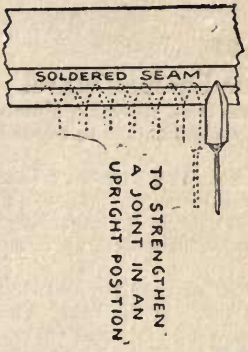
—Everyday Engineering Magazine Experiment Station



AGATE WARE CAN BE SOLDERED.
THE INSTRUCTIONS TELL HOW.

Soldering Kink No. 133

To Strengthen Seams.

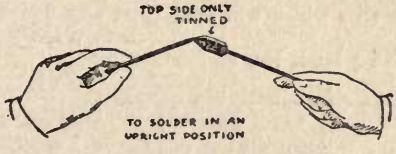


The cut will show how to solder and strengthen an upright joint, such joints are used and made by cornice makers on metal walls and ceilings. First solder the lap seam by using Nokorode salt or paste as a flux, using in addition plenty of solder; solder about twelve inches at a time, then rest your hot iron for a second or so on the soldered seam in the position shown in the cut, continue this process until entire seam is finished.

HENRY STRAFFER.

Soldering Kink No. 134

Prevents Hot Solder from Dropping.



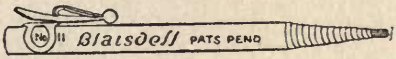
The cut will show that when doing overhead soldering or perpendicular work it is impossible to get the solder to remain in the right place if your iron is tinned or shiny on all four sides, therefore file your iron clean down to the copper, put a small amount of Nokorode paste or the salts in a solution on only one side of the hot clean iron and then rub on a little solder and wipe clean.

Your iron is now ready to do any job overhead or upright without having the solder drop on the floor or persons underneath it.

WILLIAM STORMER.

Soldering Kink No. 135

Nokorode Soldering Flux Dauber



In the cut is shown a No. 11 Blaisdell Ink Eraser, this is in pencil form, made of fine spun glass, it is an ideal Nokorode applicator when used as a brush. Unwind the paper covering until about one-half inch of the glass is bare, get an ordinary pencil cap or shield with closed end to cover the point when not in use, and you can carry your Nokorode dauber fastened to your pocket by the clip without getting clothes soiled, the same as a fountain pen, and dauber will always be handy. There is nothing better for applying Nokorode to the hot iron when you are tinning it, because it is not affected by the heat.

H. C. WING.

Soldering Kink No. 92

Stopping Leaks in Gas Fixtures.

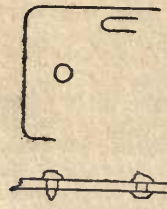
I have found "Nokorode" a great paste for soldering combination gas fixtures when you often have gas leaks in the gas arm.

First you get off the lacquer on the arm where it screws into the body of the fixture, put on the "Nokorode" and apply the solder.

FRANK SCOTT.

Soldering Kink No. 83

To Repair Leak in Aluminum or Enamel Ware.



Everyone who has tried soldering aluminum or enameled household ware has found it next to impossible.

However, I have made a discovery that I think will be of use to many.

If the hole is only a tiny one, enlarge it to about 1-16 in. with a nail or a file shank.

Then with a hot, sharp pointed soldering iron put a drop of solder in the hole. You will find the largest part of it stays on top, while a little of it will run through the hole, as shown at (A).

While the solder may not stick or be tight when cool, you can easily head up the drop which runs through, making a double-headed rivet, as shown at (B), which will hold most any liquid.

H. C. WING.

Soldering Kink No. 84

Bracing Bicycle or Motorcycle Spokes.

Last season I experienced a great deal of trouble with spokes breaking in the rear wheel of my "Indian" motorcycle, caused by continuous vibration.

In the latter part of the season I hit upon a little kink that worked wonders.

On each intersection of two spokes I twisted a small piece of wire, tying them together.

I then applied "Nokorode" to the joint and soldered the whole together.

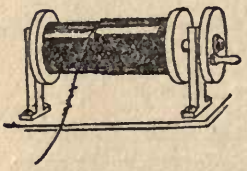
This made a tie near the centre of each spoke and stopped all vibration.

I was not troubled with broken spokes after this treatment.

H. C. WING.

Soldering Kink No. 123

Soldering Small Wires.



In rewinding coils with small wire one often breaks the wire or comes to a splice and usually has to go to the trouble of lighting his torch and heating his iron.

I use the following method to obviate this trouble and find it much quicker.

I keep on hand a quantity of small strips of tin foil about one inch by one-quarter inch, also small strips of tissue paper.

When I make a splice I apply a little "Nokorode" and wrap the joint with one of the small strips of tin foil and hold the joint over a lighted match or candle for a few seconds—just long enough to melt the foil and let the surplus run off.

Then I wrap with tissue paper and go ahead winding.

This operation can be completed in a minute and is very convenient and a time saver.

HARRY METCALF.

Soldering Kink No. 89

A Handy Lug.

A handy lug or battery connector may be made from a cotter pin having a hole in the head sufficiently large to fit snugly over a battery binding post.

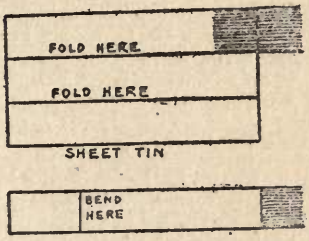
To make the connector, wind a piece of No. 20 wire around the legs of the cotter pin and secure by a drop of solder.

Protect with tape and you have a lug that can be used to great advantage in many ways.

LACY CONWAY, MODERN MECHANICS.

Soldering Kink No. 90

Brush to Apply Soldering Paste.



While visiting the main electrical shop at No. 1 Mill, I noticed a Soldering Kink card on the wall.

The kinks are very good, and I have one that I think is worth one dollar to anyone who uses your paste.

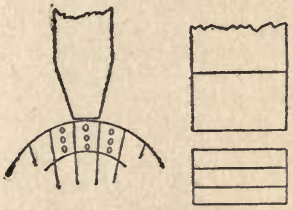
We use it here, and it comes in very handy.

I have sketched it out as best I could.

GEO. E. SYKES.

Soldering Kink No. 91

Soldering Commutator Lead Wires.



In looking over your circular I noticed "Soldering Kink No. 12," in regard to the angle of soldering irons.

Our custom is somewhat different. Most of our work is large, viz., 20 to 100 H. P. motors.

The way we taper our irons is shown in sketch attached.

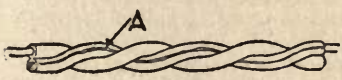
In this way you can solder each bar by itself.

We are able to solder a commutator and when finished do not have to turn the solder off.

W. H. DAVISON.

Soldering Kink No. 126

Solderless Connectors Should be Soldered on Telephone and Telegraph Work.



After a long hunt on a telephone circuit, trouble was found about seven miles down the line, in the middle of a span, and caused by a "Solderless Connector," put there no doubt when the line was strung.

One side was split from end to end.

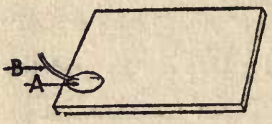
The cause of the split was too many turns of the sleeve.

Still it had held for years without making trouble, but it made enough trouble in 6 months to cut years off the lives of all concerned. The wire was worn and corroded and by turning very slightly it would go "wide open."

TELEPHONY PUBLISHING CO.

Soldering Kink No. 130

Soldering Fine Wires to Large Parts.



There is one principle in soldering that must be invariably followed to insure a first class job.

Both of the parts to be soldered must be hot enough so that the solder will melt and adhere to them.

The cut shows a tin strap which will require considerable more heat than the fine wire (B).

The strap is heated first and some solder is allowed to accumulate on it at (A).

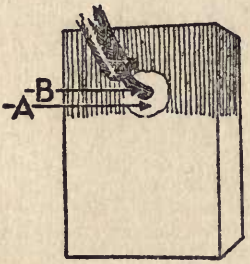
As the melted solder will heat the small wire almost instantly, the soldering iron is removed and the wire put into the heated solder before it has time to cool.

Fine wire or wire known as tinsel is difficult to solder in any other way because it burns so quickly.

TELEPHONY PUBLISHING CO.

Soldering Kink No. 127

Soldering Carbon.



One often wants to make a good connection to a carbon or graphite Motor Brush or Battery Carbon.

This can be done by electroplating the tips with copper and then tinning and soldering the connection to it.

To plate the copper make a saturated solution of blue vitrol and water—immerse a piece of sheet copper and connect to the carbon pole of a battery of two dry cells.

Connect the article to be plated to the zinc pole of the battery and dip end of carbon to be plated in the solution as deep as the plating is wanted.

When the end is sufficiently plated remove and thoroughly wash in water and dry.

The carbon can now be easily soldered with "Nokorode."

HARRY METCALF.

Soldering Kink No. 128

Soldering Ground Wire to Lead Pipe.

One thing that I have learned is how to solder a ground wire to a lead water pipe in a vertical position with cold water running through it—acid is no good for this.

One of the best things to use in soldering lead is "Nokorode."

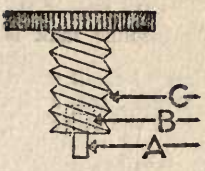
First cut a small gash in the pipe as shown at (A), wind wire around pipe in this gash using a little flux and apply solder and iron together.

Don't have the iron too hot or the solder will spatter, as the pipe is cold.

ROY G. WARDWELL.

Soldering Kink No. 125

Soldering New Platinum Points in Contact Screws.



Hold hot soldering copper on old point (A) until it becomes loosened and falls out. Then after fitting a piece of platinum the proper size, using "Nokorode," tin end to be inserted in contact screw (C) also fill end of screw at (B) with solder.

Then place platinum point on screw and heat with soldering iron until point is in its proper place.

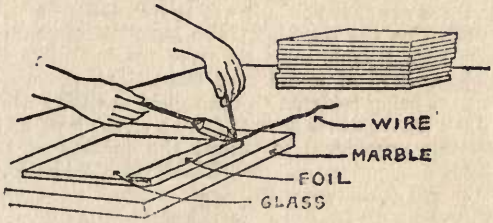
Dress end of this point until it fits other contact and you have a perfect job.

(It may be necessary first to drill out the old point.)

GLENN METCALF.

Soldering Kink No. 129

Soldering Foil in Condensers.



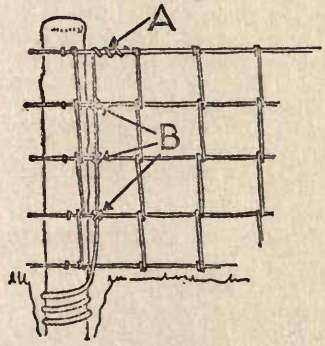
Soldering the lead wires to the foil plates is not an easy task especially if there are only several foil sheets, as they melt as soon as the iron is applied. If one will lay them on a piece of marble, they may be easily soldered if the iron is not very hot and the wires well tinned and a trace of "Nokorode" on the foil.

The marble piece simply conducts the heat away from the foil and if one is careful a good joint can be easily made.

HARRY METCALF.

Soldering Kink No. 116

Grounding Wire Fences.



It is quite a custom with farmers to ground wire fences, every 5 or 6 posts, for lightning protection.

Generally the ground wire is either pushed into the ground or wrapped around the bottom of the post, when the post is set. At any rate, it is generally fastened by staples over the ground wire and fence wire, this being the only connection.

The efficiency of this system can be improved nearly a hundred per cent. by soldering the ground wire to the fence wire, either by means of small wire bonds (B) or as shown in the cut at (A), which I think is the best way.

The ground wire is wrapped several times around top wire and if about 3 inches is left projecting vertically for a discharge point it is much more effective.

The joint (A) is thoroughly soldered by applying "Nokorode" and solder, using a blow torch.

Joints at (B) should also be soldered with use of "Nokorode."

HARRY METCALF.

Soldering Kink No. 99

Holder for Motorcycle Tank-Filler Cap.

A holder which will prevent the loss of the filler cap on a motorcycle gasoline tank is shown in the sketch.

It consists of a short piece of small chain, soldered to the inside of the filler cap, and a piece of stiff wire, fastened on the other end, as shown.

Drop the wire and chain into the gasoline tank and it will be impossible to lose the cap.

ABNER B. SHAW.

Soldering Kink No. 100

Waterproofing Hinge Joints on Automobile Hoods.

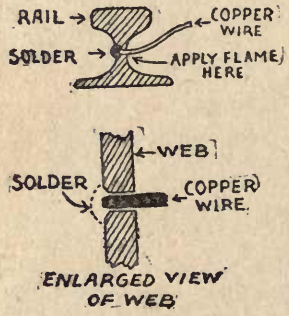
Automobiles of the cheaper grades, of which there are many, never are supplied with a covering on the hood hinges to keep out the rain

This trouble may be overcome by placing a bent strip of metal over the hinges, the upper part being soldered to the top of the hood while the lower part is bent to form a close fit with the vertical side, but left unsoldered to permit the opening of the hood.

POPULAR MECHANICS.

Soldering Kink No. 105

Soldering Bonded Rail Joints for Signal Work.



Signal work generally requires the rails to be bonded with about No. 6 copper wires. The following is an easy method:

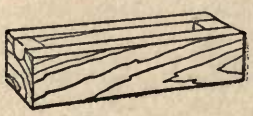
The web of the rail is drilled slightly larger than the wire and reamed or countersunk on opposite side to make same bright.

The next operation is to tin wire and apply "Nokorode" to hole in rail. Heat from a good blow torch is applied from opposite side until solder can be melted by touching to opposite side and the wire is inserted and allowed to slightly project and more solder is applied and a perfect joint results.

HARRY METCALF.

Soldering Kink No. 104

Mould for Solder.



Small pieces of solder, when the bars become too short to use, are generally thrown away.

If saved they may be melted or cast into bars or strips by means of wooden forms like the cut.

Molten mass should be well stirred before pouring. HARRY METCALF.

Soldering Kink No. 98

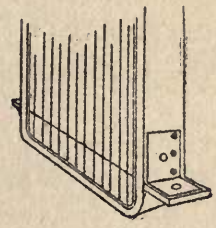
Repairing a Broken Stag Handle on a Knife.

A PIECE OF SOLDER FASTENED TO THE METAL OF THE KNIFE HOLDS THE BROKEN-OFF HORN IN PLACE.

The staghorn on my pocket-knife split, allowing a part, for about one-half the length of the handle, to slip away from the rivets. I quickly repaired it by filing a groove in the broken part of the horn, as shown in the sketch, and slightly beveling the edge as in countersinking a hole. The broken piece was replaced and pressed firmly under the rivet heads. After cleaning the brass lining of the handle and applying flux, I filled the groove full of solder, then dressed it down to the proper shape. In a longer break two or more grooves could be used with success. C. E. STEWART, JR.

Soldering Kink No. 102

Soldering Brace on Ford Radiator.



When the side supports of a Ford Radiator break off or crack, secure two pieces of brass about as thick as a dime and 3 3-4 inches by 6 inches in size.

1 3-4 inches from one end, bend at right angles to fit close in the broken corner of radiator.

Clean and tin both radiator and patch and sweat the patch on to the radiator.

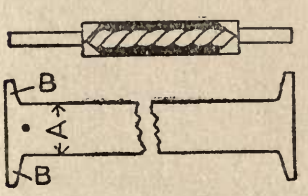
It might be well to solder all around the edges with an iron.

Then drill holes and put three tinners rivets through on the back side of the patch and drill the holes for the the support bolt and wires and you have a stronger radiator than ever before.

GLENN METCALF.

Soldering Kink No. 111

Solder Connections for Copper or Iron Wire.



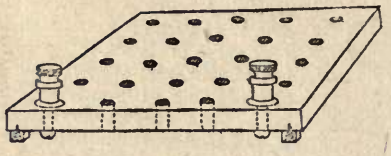
To prevent corrosion it is not considered good practice to make an unsoldered joint where the copper wire is connected to iron wire. Such connections must be made in telephone work where an insulated copper wire is attached to the iron drop wire.

The following device may be of help to those who have not become skilled in the methods generally used.

A piece of tin, the size of which depends on the length of the joint and size of the wires, is cut as shown in the sketch. For a joint where No. 19 gauge copper wire is wrapped around a No. 12 gauge iron wire the width A, should be ½ inch. Bend the body A over the joint and crimp the projections B at both ends over, to hold it in place. The space in the tin is filled with melted solder. This will make a well soldered joint that will not corrode. EARL DANIEL.

Soldering Kink No. 115

Soldering Clamps.



A convenient clamp for holding a variety of small parts to be soldered together can easily be made as follows:

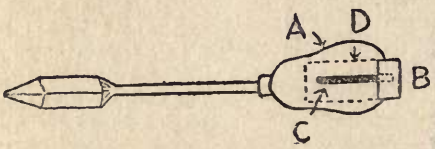
A soft pine block about one half foot square by one half inch thick is bored full of holes and two or more electrical binding posts mounted as shown.

By means of the numerous holes in the block, the posts may easily be moved to suit the work to be soldered. By using binding posts similar to those shown, either round or flat, work may be held in any desired position.

HARRY L. METCALF.

Soldering Kink No. 114

Convenient Place to Keep Nokorode.



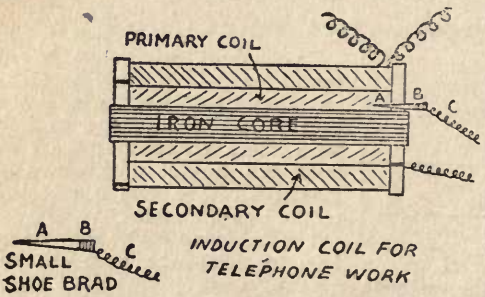
In the end of the handle (A) of my small iron which I use for delicate work I bored a one-half inch hole (D) two and one-half inches deep and keep it full of "Nokorode."

(B) is a cork with short piece of wire (C) attached, to apply Nokorode with.

HARRY METCALF.

Soldering Kink No. 108

Repairing Telephone Induction Coil.

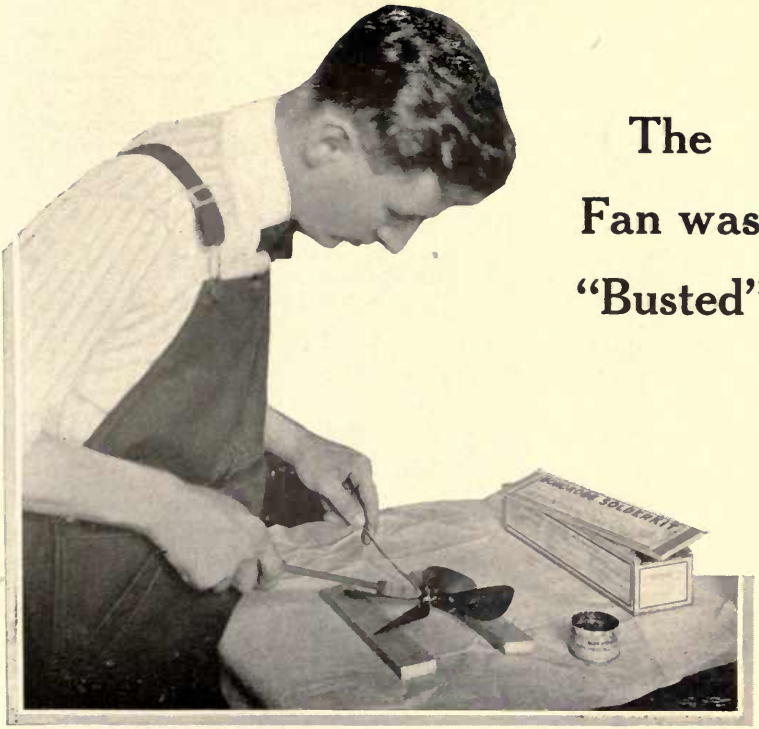


This diagram explains how I repaired a telephone wire that broke off at the induction coil.

I took a small shoemakers brad (A) and wound the wire (C) around it four times at (B) and then wedged it in the primary after soldering the wire (C) at (B), making a good and substantial connection.

I used "Nokorode" paste which I always use when soldering.

EVERETT SMITH.



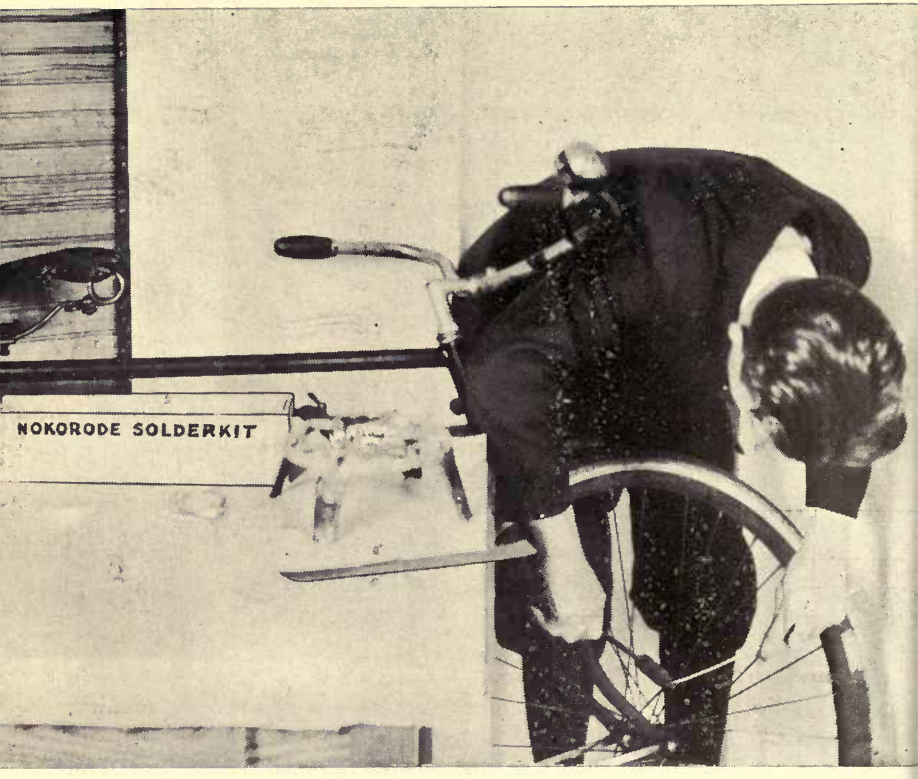
The Fan was "Busted"

Something was wrong. It didn't give the refreshing breeze that this man was accustomed to expect from it.

On inspection it was found that the collar to which the blades were fastened was loose. Therefore, the blades made only one revolution to every two or three of the motor shaft.

A little Nokorode and solder sweated the collar on in a few minutes.

—Everyday Engineering Magazine Experiment Station



SAVING HIS BICYCLE.

Soldering Kink No. 106

To Solder Terminal on Ignition Wires.

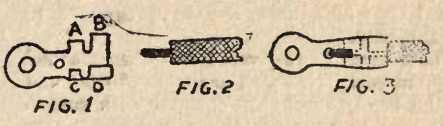


FIG. 1 FIG. 2 FIG. 3

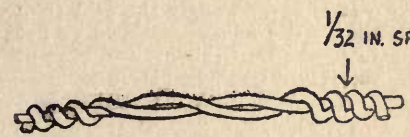
Cut insulation off for about ½ inch on end of cable (Fig. 2), and clean. Run end of wire through small hole in terminal (Fig. 1), bend edges (A B C D) over cable, then turn terminal over, bend end of wire down, apply "Nokorode" paste and solder.

This not only makes a strong job but makes a first class electrical joint.

Most mechanics fail to solder terminals, but use this suggestion and get better results. GLENN METCALF.

Soldering Kink No. 107

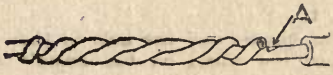
Soldering Splices in Electric Wires.



In making a splice or branch connection do not wrap the adjacent turns too closely together but leave them apart about 1-32 inch so that the solder will readily flow to both wires, making a perfect connection. HARRY METCALF.

Soldering Kink No. 109

Soldering Copper Clad Wires.



When a splice is made on copper clad iron wire, it is impossible to keep from cutting through copper, as at (A).

When left in this condition, moisture soon starts a chemical action, which causes rust and results in a bad splice.

The best way I know to avoid this is to carefully solder the splice and tin all of the place where the copper coating has been punctured.

This is easily accomplished by the use of "Nokorode" as solder will go any place "Nokorode" does and easily flows over the injured parts. HARRY METCALF.

Soldering Kink No. 103

Stopping Oil Leaks in Ford Crank Cases.

Sometimes Ford crank cases leak at the rivets (A) which hold the back support to the crank case.

These may be re-riveted and then cleaned all around each rivet on the inside of case and then the head thoroughly covered with solder.

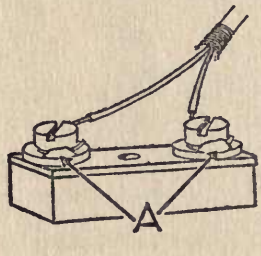
Be sure to have the rivets and crank case cleaned thoroughly so the solder will flow freely and unite the two parts.

Try this; it will save lots of oil.

GLENN METCALF.

Soldering Kink No. 118

Solder Telephone Joints Wherever Possible.



Soldered joints can't be beat, and it is often necessary to solder interior duplex and drop wires to make some other connection.

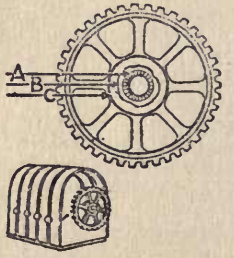
A very simple and quick way is to solder each contact as at (A).

It is best to apply the heat from the middle of the flame so as not to smoke up the joint and prevent the solder from sticking.

W. A. HEIDLE.

Soldering Kink No. 119

To Fasten Small Wheel on Telephone Generator.



When a small wheel (or cog) on a telephone generator is worn out and you haven't one of the right kind to replace it, you are sometimes up against it.

We have repaired them by taking a wheel of the same size, but sometimes with a hole (C) in it very much larger than the spindle (A).

Place a tight washer on the spindle and tin the spindle and the hole in the wheel, place the wheel on the spindle and fill the space with solder at (B).

To get the spindle in the center of the wheel, take the magnets off the generator and place it on end in a vice with the wheel on top and turn slowly while the solder is hot and the small wheel becomes true and runs as smooth as a new one.

F. E. DRYSDALE,
Commercial Telephone and Telegraph Co.,
Robinson, Ill.

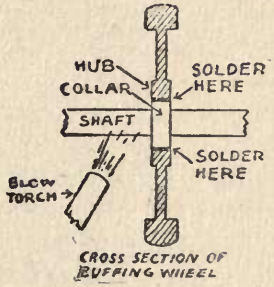
Soldering Kink No. 131

A Cheap Flashlight

The lamp is soldered at its outside terminal to one contact of battery in such a way that the other battery contact will press on the base of lamp and complete the current.

POPULAR MECHANICS

Soldering Kink No. 136



To Sweat a Buffing Wheel on a Shaft.

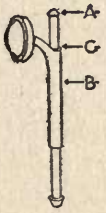
Clean off the collar on the shaft, tin over with solder and Nokorode. Heat the shaft and slowly tap on the Buffing Wheel.

When it has set it makes a tight joint that will withstand the blows of a 25-pound hammer.

T. O'HARA.

Soldering Kink No. 137

Showing that the Art of Soldering is Useful even to a Society Man.



Recently I bought a set of Pearl Shirt Studs and Cuff Links to wear with my dress shirt.

The Shirt Studs were of the design shown in the sketch.

These are made with the intention of putting a burr on the end of the rod at "A".

After being used several times, however, the little burr wore down so that the rod would slide through the slot "B" at "C".

Last evening when I went to put on my shirt I found that the rod would not stay in.

It would keep slipping through the slot.

I got out the "Nokorode" Solderkit and put the very smallest portion of "Nokorode" that I could get on the point of a pin on the end of the rod.

Then I heated the Soldering Iron on the Gas Stove in such a way there was a bubble of melted solder on the iron.

I then laid the stud on a piece of board so as not to conduct the heat away too fast and held the Soldering iron under the point so that just a little daub of solder stuck to the Shirt Stud at "A".

It is now so securely fastened into the slot of the stud that it is impossible for it to be lost, and yet it will slide back and forth as designed.

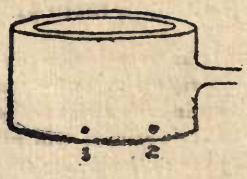
This saved me buying a new set of Studs for which I would have to pay at least $2.50.

The Solderkit cost me new only $1.00 and I will find uses for it continually.

O. H. ROBINSON.

Soldering Kink No. 64

How to Solder a Metal Float in Carburetor.



When a metal float in a carburetor leaks it may be soldered as follows: If hole is so small you cannot see it, dip float in hot water; this will cause the air inside of float to expand and a bubble will issue from the hole. After finding the hole this way, clean, apply Nokorode Paste and solder with a well-tinned and heated iron, applying only enough solder to stop leak. Otherwise the float will be too heavy. If float is full of gasoline, punch hole 2 in bottom or top of float, pour gasoline out, and then solder hole up. Then you can proceed as above stated to find leak and solder.

GLENN METCALF.

A practical soldering outfit, containing complete instructions for soldering, one soldering iron, two pieces of emery cloth, one stick of solder, one package of Friction Tape and one 2-ounce can of Nokorode Soldering Paste, for the Home, Motorist, the Boy, Motor-Cyclist, Boat Owner, Janitor, Mechanic, Electrician, Farmer, for everybody.

Tells how to solder everything that can be soldered.

Sent postpaid anywhere in the United States for $1.00 by The M. W. Dunton Co., Providence, R. I.

LAW OFFICES
CLEVELAND & GOODRICH
GRIFFIN, GEORGIA

COLLECTION DEPARTMENT
P. M. CLEVELAND, MGR

June 15th, 1915

The M. W. Dunton Co.,

Providence, R. I.

Gentlemen:-

I received my Nokorode Solderkit yesterday evening, and performed my maiden job after supper with entire success, which job was

A KINK FOR CAMPERS

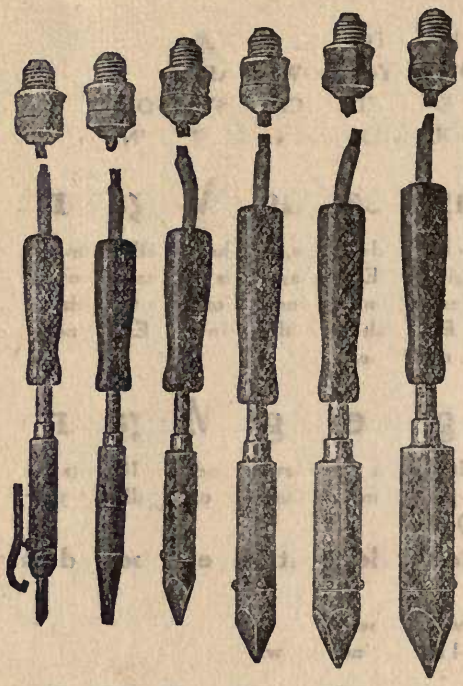
I have never been able to buy a sieve that would "nest" with my other cooking utensils, so last night, I took a tin plate from my outfit and cut out the bottom, leaving a margin of the bottom about one quarter of an inch wide. I then cut a piece of wire screen the exact size of the bottom of the pan, fitted it inside the pan and soldered it to the margin of the bottom. This made a very practical sieve, which takes up no room, weighs practically nothing and completes my cooking outfit.

Yours truly,

L. P. Goodrich

N. B. Please advise me what use to make of the Friction Tape. I do not see it mentioned in the Instructions, which contain everything that I know about soldering.

SIMPLEX
ELECTRIC SOLDERING IRONS



238 239 240 241 242 243

These irons are portable and for lamp socket use.

The heating element is constructed with nickel chromium resistance wire and mica insulation, and located to conduct the heat quickly to the tip and insulated to prevent the handle from heating.

The tip is removable

Each iron is provided with a cord and lamp socket plug.

All tips excepting No. 238 are made of forged copper.

When ordering specify voltage.

No. 238 Telephone Iron Rod tip 5-16" dia. 12 oz. 75 watts

No. 239 Same as No. 238, except fitted with forged copper tip, ⅜" dia. Four flat sides tapered to 1-16" at point. Overall length 12" 14 oz. 75 watts.

No. 240 Useful for fixture wires and home use where more heat is required than telephone sizes. This is a popular size Dia. of tip 1" Overall length 12" 17 oz. 100 watts.

No. 241 For light manufacturing and repair work. Dia. of tip 1¼" Overall length 15" 26 oz. 220 watts.

No. 242 General bench work, tinware, and used largely by munition factories. Dia. of top 1½". Overall length 15½". 34 oz. 275 watts

No. 243 Automobile repairing, heavy tinware and sheet metal work when used intermittently. This size is also used for branding purposes. Dia. of tip 1¾" Overall length 15½" 50 oz. 350 watts.

Simplex Electric Heating Co.
CAMBRIDGE, MASS.